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MONTEREY, CALIFORNIA

THESIS

**APPLYING SYSTEMS THINKING TO LAW
ENFORCEMENT SAFETY: RECOMMENDATION FOR
A COMPREHENSIVE SAFETY MANAGEMENT
FRAMEWORK**

by

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December 2015

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**APPLYING SYSTEMS THINKING TO LAW ENFORCEMENT SAFETY:
RECOMMENDATION FOR A COMPREHENSIVE SAFETY MANAGEMENT
FRAMEWORK**

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ABSTRACT

Each year, approximately 100,000 police officers experience work-related occupational injuries, and more than 100 are killed on the job, in training accidents, routine operations, and emergency response. Many of these injuries and deaths are considered preventable. Although the law enforcement profession has recently begun to place an emphasis on safety, with the goal of reducing injuries and fatalities, no systematic or comprehensive approach to safety management exists to oversee and coordinate safety throughout organizations.

This thesis uses best-practice research to examine the safety protocols, practices, and safety management systems implemented in other high-risk professions, such as the fire service, military, and private industry, to determine common components and effective strategies that may be applied to the law enforcement profession. Numerous issues were identified to include the lack of a systemic approach to safety management, lack of a national reporting system for accidents and injuries, lack of safety management training for officers and leadership, lack of safety regulations and standards in the profession, and a failure to dedicate personnel to managing safety in organizations. A recommendation is then offered for a model law-enforcement safety management framework that can be applied to agencies of any size, with the goal of reducing accidents, injuries, and fatalities in the profession.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	After-Action Review
BJA	Bureau of Justice Assistance
BLS	Bureau of Labor Statistics
BVP	Bulletproof Vest Partnership
CFOI	Census of Fatal Occupational Injuries
COPS	Community Oriented Policing Services
CRM	Crew Resource Management
DA	Department of the Army
FEMA	Federal Emergency Management Administration
FTI	Field Training Instructor
HRO	High-Reliability Organization
IACP	International Association of Chiefs of Police
IACF	International Association of Fire Chiefs
IAFF	International Association of Fire Fighters
ICS	Incident Command System
ILEETA	International Law Enforcement Educators and Trainers Association
ISO	Incident Safety Officer
LMCIT	League of Minnesota Cities Insurance Trust
LEOKA	Law Enforcement Officers Killed and Assaulted
LODD	Line of Duty Death
MCC	Major City Chiefs
NFIRS	National Fire Incident Reporting System
NFPA	National Fire Protection Agency
NHTSA	National Highway Traffic Safety Administration
NIOSH	National Institute of Occupational Safety and Health
NSCCI	National Safety Culture Change Initiative
NLEOMF	National Law Enforcement Officer's Memorial Fund
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Administration
OSW	Officer Safety and Wellness
PERF	Police Executive Research Forum

PTSD	Posttraumatic Stress Disorder
SMS	Safety Management System
TSO	Training Safety Officer
USFA	U.S. Fire Administration
VALOR	Preventing Violence Against Law Enforcement and Ensuring Officer Resilience and Survivability Program

EXECUTIVE SUMMARY

Each year, more than 100 law enforcement officers are killed on the job in training accidents, operations, and emergency response.¹ Fatalities, however, tell only part of the story. Although accurate statistics for police officer injuries do not exist, estimates indicate that “approximately 100,000 police officers experience occupational injuries or illnesses each year.”² It is also believed that many of these injuries and deaths are preventable.³

While the law enforcement profession has begun to place an emphasis on safety with the goal of reducing injuries and fatalities, the approach has focused narrowly on the development of programs in targeted high-risk areas, such as driving and health and wellness. These safety programs often operate independently and without coordination with other safety initiatives, and fail to incorporate dedicated and trained safety personnel to provide oversight on safety programs and practices. Unfortunately, this approach allows for gaps in safety management that lead to injuries and fatalities that could be prevented.

With the goal of developing a framework for a comprehensive law-enforcement safety management system, analysis was conducted to identify the best safety programs, policies, and practices in private industry and government organizations. These programs and practices were evaluated for effectiveness, comprehensiveness, and applicability to the law enforcement profession.

One of the complicating factors for this task is the absence of accurate data on law enforcement accidents and injuries, due largely to the lack of a reporting mandate within

¹ Steven G. Brandl and Meghan S. Stroshine, “The Physical Hazards of Police Work Revisited,” *Police Quarterly* 15 (2012): 262–282.

² Tom La Tourrette, “Safety and Health Protection Efforts in the Police Service,” *Police Chief* June 2011, http://www.policchiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=2403&issue_id=62011.

³ Yousry A. Zakhary, “A Zero Tolerance Approach to Officer Injuries,” *Police Chief*, June 2008, http://www.policchiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=1510&issue_id=62008.

the profession and the reluctance of many agencies to share information.⁴ Although national databases capture statistics on officers assaulted and killed in the line of duty, no such database exists for officer injuries.⁵ Accurate data on law enforcement accidents and injuries is needed to properly assess and understand the range, nature, and cause of officer-related injuries and fatalities across the policing profession, so that effective prevention strategies can be implemented.

During the course of research, the author identified areas of high-risk in law enforcement that contribute to a large number of preventable injuries and fatalities in the profession. These areas include a strong sub-culture that supports a higher level of risk taking in operations; training exercises, especially scenario-based training involving use of force and defensive tactics; driving and traffic-related incidents, with the failure to wear seatbelts identified as a significant contributor; fatigue and complacency; and physical and emotional health and wellness.⁶

Then, the safety programs, practices, and initiatives of law enforcement and other high-risk organizations were examined. Current law enforcement efforts include specific safety-related programs in targeted high-risk areas, such as traffic and vehicle operation programs, as well as myriad health and wellness initiatives, but indicate the lack of a systematic or comprehensive approach that is coordinated or supported through national efforts. In contrast to law enforcement efforts, an examination of the fire service and the military indicates a strong focus on safety with standards, regulations, and programs implemented and coordinated across the profession and through the various branches of the military. These organizations also place an emphasis on the mitigation of operational risk through validated programs such as crew resource management. The fire service further sets itself apart from law enforcement by the detailed collection of injury and

⁴ International Association of Chiefs of Police (IACP), *Reducing Officer Injuries: Final Report*. (Alexandria, VA: IACP, 2014).

⁵ Ibid.

⁶ Julia Hill et al., *Making Officer Safety and Wellness Priority One: A Guide to Educational Campaigns* (Washington, DC: Office of Community Oriented Policing Services, 2014); La Tourrette, "Safety and Health Protection Efforts in the Police Service"; David Griffith, "Training Accidents," *Police* 37, no. 4 (2013), 47–51; Darrel Stephens, Mora L. Fiedler and Steven M. Edwards, *OSW Group Annual Summary: Issues and Recommendations Discussed for Improving the Well-being of Police Officers* (Washington, DC: Office of Community Oriented Policing Services, 2012).

fatality data from various professional organizations. Safety programs in private industry reveal an emphasis on behavioral-based programs that focus attention on the unsafe behaviors of employees and place responsibility for workplace safety directly on the worker rather than on workplace conditions.⁷ Safety programs in private industry are also heavily influenced by federal regulations and standards imposed by the Occupational Safety and Health Administration.

Research findings indicate that numerous issues contribute to the number of preventable injuries and fatalities in the law enforcement profession. These include the following:

- a failure to take a systems approach to safety management;
- a lack of dedicated safety personnel to oversee high-risk operations and training environments;
- a lack of education programs for senior management and rank and file officers on Occupational Health and Safety (OHS) management;
- a lack of a national mandate and reporting depository for injuries and accidents;
- a lack of regulations and standards for safety across the profession;
- a lack of a mandated and standardized after-action review format and process to capture and share lessons learned;
- a failure to incorporate OHS as a discipline within law enforcement.

To address the deficiencies found in managing law enforcement safety, a framework for a law-enforcement safety management system was developed and is offered as a flexible model that can be adapted to agencies of any size and implemented without significant cost or extra resources. Other recommendations to improve safety within the profession include the following:

- the development of standardized OHS and risk management training for both senior leadership and rank and dedicated safety personnel;

⁷ James Frederick and Nancy Lessin, "Blame the Worker: The Rise of Behavioral-Based Safety Programs." *Multinational Monitor* (2000): 10–17.

- the development of a comprehensive, national survey regarding safety management practices across the profession;
- the development of a national mandate and reporting depository for injuries and accidents;
- and the development of a standardized format for after-action review reports (AARs) and training to conduct AAR processes.

The vast number of independent law enforcement agencies across the country—more than 18,000—poses a significant challenge to the development of a standardized approach to law enforcement safety. Police organizations operate independently, and priorities differ vastly for each agency amid political and budgetary concerns. Resources to develop and implement safety, health, and wellness programs is also a significant challenge in today’s economic climate of shrinking budgets, and the culture within law enforcement organizations contributes to a pattern of acceptable risk-taking that leads to repeated injuries and accidents. Although risks vary and not all injuries and fatalities can be prevented, law enforcement continues to experience problems in similar areas, suggesting that organizational culture plays a key role in failing to address safety-related deficiencies.

Despite the challenges, agency leadership can immediately begin to institute cultural changes by placing a priority on safety in their organizations. The proposed law-enforcement safety management framework offers a viable option for agencies to manage safety without adding significant resources, presenting a systematic approach to identifying hazards, and developing measures to control and mitigate risk.

The high-risk environment and nature of work conducted by law enforcement officers demands a holistic and dedicated approach to safety in order to reduce injuries and fatalities throughout the profession. Meaningful improvements in safety will require significant change and collaboration across the profession, input from a broad spectrum of disciplines, and leadership and support from national law enforcement organizations. The cost of the current approach toward safety within the profession is too great to ignore.

ACKNOWLEDGMENTS

I want to thank all of the police safety officers I have worked with in the past, whose dedication to ensuring the safety and wellness of their fellow officers—despite an organizational culture that often disregarded their efforts—has inspired me to continue the struggle to make safety a priority across the profession. The importance of this struggle was made evermore personal with the preventable and tragic death of Lt. Frank Stecco, whose sacrifice brought a harsh reality to an agency's failure to have established safety officers and protocols in place. Although of little comfort to his family, his death has led to changes that have enhanced the safety of those who followed.

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I. INTRODUCTION

In October 2008, a large county police agency in Virginia was conducting a water-rescue training exercise at a local regional park. Numerous specialty units were participating, including the agency's helicopter unit, marine patrol unit, and dive team, with support from the county fire and rescue department. The exercise scenario included an officer acting as a role player in distress, who was inserted in the water by the dive team for the purpose of being "rescued" by the helicopter crew. Soon after entering the water, the officer went underwater and became missing.

An immediate search for the officer began by units who were present, followed by a massive response of resources involving approximately 50 mutual aid partners. After five days, the deceased officer was located underwater, near the location where he disappeared. Investigations into the training-related fatality attributed the accident to several lapses in safety protocols and safety violations committed by the agency conducting the exercise.¹

In December 2013, a sergeant from a county sheriff's office in New Mexico arrived on the scene of a major highway incident to assist in managing a multi-vehicle crash scene on an interstate highway during severe weather conditions.² A storm moving through the area had created icy road surfaces, gusting winds, and low visibility due to blowing snow. As a result, multiple vehicle accidents occurred at this site in close proximity to one another prior to the sergeant arriving.

Six emergency units from different public safety agencies were on-scene along both sides of the divided roadway at the time of the incident. As the sergeant crossed the northbound lanes to confer with another officer, he was struck and killed by a passing vehicle that had lost control due to the icy conditions.

¹ Personal knowledge of and involvement with this line-of-duty fatality incident.

² National Law Enforcement Officers Memorial Fund (NLEOMF), *Sergeant Dies after Being Struck by a Motor Vehicle on Interstate Highway, New Mexico* (Washington, DC: NLEOMF, 2014).

An investigation identified several key contributing and controllable factors in the fatality: the need for increased traffic control resources; failure to implement the incident command system to evaluate the response activities, assess risk, and dedicate sufficient resources to control the scene; a failure of officers at the scene to wear high-visibility, reflective traffic vests; and the failure to develop pre-incident plans and standard operating procedures for deployment to low frequency/high risk highway incidents.³

Incidents like these are not uncommon in the law enforcement profession. Despite recent advances in police officer safety, health, and wellness, preventable line-of-duty accidents resulting in injuries and fatalities continue to occur, leaving families and agencies devastated, and communities impacted. The purpose of this research is to recommend a comprehensive safety management framework for law enforcement that addresses safety across the entire organization, with the goal of mitigating risk and reducing the number of preventable injuries and fatalities across the profession.

A. PROBLEM STATEMENT

According to the Bureau of Labor Statistics, police officers have one of the highest rates of injury and illness of any occupation.⁴ It is estimated that each year over 100 officers are killed on the job in training accidents, routine operations, and emergency response.⁵ Fatalities, however, only tell part of the story. Although precise statistics for police officer injuries are not available, “approximately 100,000 police officers experience work-related occupational injuries or illnesses each year.”⁶ It is also estimated that many of these injuries and deaths are preventable.⁷ Mora Feidler describes in *Officer*

³ Ibid.

⁴ Bureau of Labor Statistics, “Police and Detectives,” accessed Aug. 21, 2015, <http://www.bls.gov/ooh/protective-service/police-and-detectives.htm>.

⁵ Steven G. Brandl and Meghan S. Stroshine, “The Physical Hazards of Police Work Revisited,” *Police Quarterly* 15 (2012), 262–282.

⁶ Tom La Tourrette, “Safety and Health Protection Efforts in the Police Service,” *Police Chief* June 2011, http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=2403&issue_id=62011.

⁷ Yousry A. Zakhary, “A Zero Tolerance Approach to Officer Injuries,” *Police Chief*, June 2008, http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=1510&issue_id=62008.

Safety and Wellness, that “from 2000–2009, a total of 728 officers were accidentally killed due to events such as automobile, motorcycle or aircraft accidents; being struck by cars; shooting accidents; drowning or falling; or explosion or electrocution accidents.”⁸

In addition to the physical impact to the officer(s) involved, line-of-duty fatalities and critical injuries often cause psychological trauma to officers and their agencies, leaving lasting effects that can affect professional reputations, and lead to officer suicides, criminal prosecution, and wrongful death or negligence lawsuits.⁹ The cost of defending, litigating, and resolving lawsuits often results in significant financial burdens on agencies, and further contributes to the emotional impact on individuals involved.¹⁰

Law enforcement officers, in addition to their core mission of delivering effective police services to communities, also play a critical role as homeland responders in our nation’s ability to respond to acts of terrorism, natural disasters, or pandemics effectively. Fatalities and injuries impair an agency’s readiness and preparedness to respond to these and other emergencies. Keeping officers safe from hazards faced in the law enforcement profession will enhance mission effectiveness and community safety. Although not all risk can be eliminated, improvements can be made by addressing the culture of safety in agencies, and developing a focused, systematic approach to safety in the policing profession.

Accurate statistical data is needed to develop effective safety programs that address hazards in the profession, and reduce the rate of injuries and fatalities. Research indicates that accurate data on law enforcement accidents and injuries is currently non-existent in the profession, due largely to the lack of a reporting mandate and the reluctance of many agencies to share information.¹¹ Although national databases capture

⁸ Mora L. Feidler, *Officer Safety and Wellness: An Overview of the Issues* (Washington, DC: Community Oriented Policing Services [COPS], 2015).<http://cops.usdoj.gov/pdf/OSWG/e091120401-OSWGReport.pdf>.

⁹ Thomas Connelly, “Perspective: Risk Management and Police Training,” *FBI Law Enforcement Bulletin*, March 2010, <https://leb.fbi.gov/2010/march/perspective-risk-management-and-police-training>.

¹⁰ Ibid.

¹¹ International Association of Chiefs of Police, (IACP) *Reducing Officer Injuries: Final Report*. (Alexandria, VA: IACP, 2014).

statistics on officers assaulted and killed in the line of duty, no such database exists for officer accidents and injuries.¹² There is also no comprehensive database that accurately captures lessons learned from these incidents, so that future accidents might be prevented.¹³

Although the policing profession has more recently begun to place an emphasis on safety with the goal of reducing injuries and fatalities, the approach has narrowly focused on the development of programs in targeted high-risk areas such as driving, health, and wellness, and policy development.¹⁴ These safety programs operate independently and often without coordination with other safety initiatives, addressing problem-specific issues such as “mandatory wear” requirements for bulletproof vests and officer health and fitness, while ignoring other problem areas with an organization. Despite its value in addressing targeted high-risk behaviors, this approach has failed to incorporate a comprehensive framework that addresses all areas of risk within agencies, and fails to incorporate dedicated and trained safety personnel to provide expert and focused oversight on safety programs and practices. According to the Police Executive Research Forum (PERF), “less than half of U.S. states mandate that law enforcement agencies meet even basic occupational health and safety program components.”¹⁵ A review of the literature available on safety programs in law enforcement reveals a need for a comprehensive approach to safety within individual agencies, as well as a significant shift in organizational culture.

The law enforcement profession may benefit from studying the safety protocols, practices, and safety management systems implemented in other high-risk professions such as the fire service, military, and private industry, with the goal of developing more effective programs that place a priority on safety and mitigate risk in the workplace. The

¹² Ibid.

¹³ Scott Brien and Stephen Fender, “Officer Safety Corner: National Data Collection: A Call to Action,” *Police Chief*, May 2012, http://www.policchiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=2661&issue_id=52012.

¹⁴ Julia Hill et al., *Making Officer Safety and Wellness Priority One: A Guide to Educational Campaigns* (Washington, DC: Office of Community Oriented Policing Services, 2014).

¹⁵ Elizabeth L. Sanberg et al., *A Guide to Occupational Health and Safety for Law Enforcement Executives* (Washington, DC: Police Executive Research Forum, 2010).

high-risk environment and nature of work conducted by law enforcement officers demands a holistic and dedicated approach to safety in order to reduce fatalities and injuries throughout the profession.

B. RESEARCH QUESTION

How can an evaluation of workplace safety practices, policies, and programs in public safety, government organizations, and private industry, lead to the development of a model framework for a law-enforcement safety management system?

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II. LITERATURE REVIEW

This literature review provides research into the current safety programs and organizational cultures in public safety organizations, the military, and private industry to identify smart practices or processes that can be used to develop the framework for an effective safety management system for the law enforcement profession. The objective is to identify core safety program components that are common in high-risk organizations, and apply a systems-thinking methodology to recommendations for a comprehensive safety management framework. The goal of implementing such a framework is to reduce the number of preventable injuries and fatalities across the profession. Information in this literature review has been organized into the following categories:

- high-risk nature of policing,
- gaps in data and programs,
- why accidents happen,
- safety culture and role of leadership,
- safety programs in law enforcement,
- safety programs in private industry,
- safety programs in government organizations, and
- systems thinking

A. HIGH-RISK NATURE OF POLICING

There is little dispute throughout the literature that policing is a dangerous profession. The range of risks and threats associated with a career in law enforcement are varied and change over time. Statistics from the FBI's Law Enforcement Officers Killed and Assaulted (LEOKA) and National Law Enforcement Officer's Memorial Fund (NLEOMF) databases indicate a "rise in the number of officers killed and assaulted in the line of duty over the past 10 years, especially by gunfire."¹⁶ These two databases provide

¹⁶ "Law Enforcement Facts," National Law Enforcement Officers Memorial Fund (NLEOMF), accessed August 21, 2015, www.nleomf.org/facts.enforcement.

the only accurate data in the country on police officers killed and assaulted; however, to accurately assess the extent of the danger to the policing profession, and determine the areas of focus for safety programs, additional data is needed on accidents and injuries.¹⁷

Categories of high-risk areas in policing have been consistently identified in research. These areas continue to be of concern for police executives due to the liability and risk associated with their potential outcomes. Examples include realistic scenario-based training conducted in use-of-force classes, special operations training, firearms and active shooter training, and vehicle accidents, which typically comprise the largest category of line of duty deaths each year.¹⁸

In addition to the physical hazards of the law enforcement profession, the high stress nature of the police work places officers at a greater risk for psychological problems such as posttraumatic stress disorder (PTSD), which can cause depression, irritability, alcohol abuse, domestic problems, and heart-related issues. Annual rates for suicide among active and retired police officers are estimated to be above line-of-duty deaths, although studies vary widely in their findings on this issue.¹⁹ Complicating the psychological problems experienced by police officers, as with those serving in the military, is the cultural stigma many officers feel in seeking assistance for their problems and a concern of being labeled weak or unfit for duty.

B. GAPS IN DATA AND PROGRAMS

Research conducted in the area of officer-related injuries and fatalities reveals a significant gap in the need for more accurate data collection. Relevant data regarding law enforcement injuries and fatalities is not being collected, and is clearly documented throughout the literature and recognized by leaders in the policing profession. According to the International Association of Chiefs of Police (IACP), “the officer injury picture has been narrowly defined, with the majority of the focus on line-of-duty deaths and

¹⁷ IACP, *Reducing Officer Injuries*.

¹⁸ “Law Enforcement Facts.”

¹⁹ “By Their Own Hand: Suicide among Law Enforcement Personnel,” *Community Policing Dispatch*, April 2009, http://cops.usdoj.gov/html/dispatch/April_2009/suicide.htm.

assaults.”²⁰ Accurate data on police officer accidents and injuries, however, has been virtually non-existent.²¹

Steven Brandl and Meghan Stroshine’s study on the physical hazards of police work indicates that there are significant problems associated with defining the danger of the policing profession strictly in terms of assaults and homicides, since (they argue) it “distorts the risk and severely underestimates the hazards involved.”²² The lack of accurate data also makes it difficult for police executives to address the range of risks faced and enact preventative measures.²³ Their study further recognizes the need to research and measure the psychological effects to police officers after physical injuries are sustained.²⁴

To properly assess and understand the range, nature, and cause of officer-related injuries and fatalities across the policing profession, it is essential that data on all accidents and injuries be captured from law enforcement agencies nationwide. This need was recently recognized by the President’s Task Force on 21st Century Policing, which called for a nationwide repository for officer injuries in order to make effective recommendations on tactics, training, equipment, and policies.²⁵

In its 2014 report titled *Reducing Officer Injuries*, the IACP identifies three reasons why tracking all police-related injuries is important:

- (1) to determine the impact of costs such as lost wages, medical expenses and insurance claims, as well as productivity decreases;
- (2) to develop effective training and policies to prevent injuries; and
- (3) to gain a comprehensive understanding of the scope of all police-related injuries on a national level.²⁶

²⁰ IACP, *Reducing Officer Injuries*.

²¹ Ibid.

²² Steven G. Brandl and Meghan S. Stroshine, “Toward an Understanding of the Physical Hazards of Police Work,” *Police Quarterly* 6 (2003): 172–191. doi:10.1177/109861113006002003.

²³ Brandl and Stroshine, “Toward an Understanding,” 172–191.

²⁴ Ibid.

²⁵ President’s Task Force on 21st Century Policing, *Final Report of the President’s Task Force on 21st Century Policing*. (Washington, DC: Office of Community Oriented Policing Services, 2015).

²⁶ IACP, *Reducing Officer Injuries*.

The development of effective safety programs is dependent on this knowledge and must incorporate identified trends and patterns of injuries and fatalities, and how they occurred.

In addition to the lack of a comprehensive database to properly analyze officer injuries, research also reveals a lack of willingness on the part of law enforcement agencies to openly share lessons learned due to fear of reprisal or criticism.²⁷ The use of after-action reviews (AARs) has been inconsistent and largely reserved for major incidents, and is not standardized or mandated in the profession. The AARs that are conducted often do not provide an honest depiction of the issues due to professional concerns over reputations and liability.²⁸

In 2013, the Police Foundation, an “independent, non-membership organization dedicated to improving policing through innovation and science,” developed an online near-miss reporting system for law enforcement officers that is modeled after the International Association of Fire Chiefs (IAFC) near-miss reporting program.²⁹ The Internet-based program “encourages law enforcement personnel to share their near miss stories and lessons learned to shield other law enforcement personnel from accidents, injuries and fatalities, as well as to prevent other community crises from occurring.”³⁰ Information shared on the website is anonymous, secure, non-punitive, and confidential. Efforts such as these to capture valuable lessons are encouraging but are limited by the voluntary cooperation and honest reporting of participating law enforcement agencies.

The Bureau of Justice Assistance’s (BJA) 2010 *Guide to Occupational Health and Safety for Law-Enforcement Executives* is the only professional source located during this literature review that identified the need for a comprehensive approach to occupational health and safety programs for law enforcement. The guide provides a

²⁷ Police Foundation, “LEO Near Miss: Lessons Learned Become Lessons Applied,” accessed Nov. 21, 2014. <http://www.leonearmiss.org>.

²⁸ Amy Donahue and Robert Tuohy. “Lessons We Don’t Learn: A Study of the Lessons of Disasters, Why We Repeat Them, and How We Can Learn Them.” *Homeland Security Affairs II*, July 2006, <https://www.hsaj.org/articles/167>.

²⁹ Police Foundation, “Home,” accessed Oct. 31, 2015, <http://www.policefoundation.org>.

³⁰ “LEO Near Miss.”

framework for “identifying the basic program elements for creating new, or strengthening and maintaining existing, occupational health and safety programs for law enforcement agencies, regardless of the threat identified.”³¹ While this resource provides an excellent starting point for developing comprehensive state and local law enforcement safety programs, it fails to recommend the incorporation of dedicated safety officer resources to oversee officer health and safety, especially during training and response to high-risk incidents, or recommend an approach to train and certify specialized law enforcement safety officers.

Although current safety programs can and have been effective in addressing specific targeted risks, they often operate independently or in isolation, failing to address safety in a coordinated and comprehensive manner. This can result in gaps regarding safety protocols within agencies. This was a key point in a 2010 report published by PERF and BJA, which stated, “the law enforcement field could significantly benefit from adopting a standardized and comprehensive approach to occupational health and safety.”³² Also missing from current law enforcement safety programs are performance measures to evaluate the effectiveness of those programs that do exist. Without measures and evaluations to determine whether existing programs are having a positive impact on safety, agency resources may be misdirected and/or programs eliminated from annual budgets.

This literature review revealed that no comprehensive safety management system exists in the law enforcement profession, a system that addresses risk comprehensively in routine, training, and operational environments. Such a system includes practices such as a comprehensive assessment of risks and hazards in the workplace; investigation and analysis of accidents and incidents; implementation of safety-related policies and regulations; performance metrics and reporting mechanisms; and system audits to determine if control measures are being practiced.

³¹ Sanberg et al., *A Guide to Occupational Health and Safety*, 1–62.

³² Ibid.

C. WHY ACCIDENTS HAPPEN

The human does not change. During the period of recorded history, there is little evidence to indicate that man has changed in any major respect. Because the man does not change, the kinds of errors he commits remain constant. The errors that he will make can be predicted from the errors he has made.

—Risk-management pioneer Archand Zeller³³

To effectively design and implement safety programs in the workplace, it is important to understand why accidents are occurring, from both an employee and process standpoint. As stated in the 2004 journal article “The Role of Leadership in Instilling a Culture of Safety,” “effective safety management and safety culture must be built on an understanding of the cause of unsafe acts within the workplace.”³⁴ Two academic but opposing theories of safety management systems have been identified to explain why accidents and injuries occur in the workplace, one focusing on systems within the organization, the other on people, which emphasizes flexibility and learning.³⁵ Although strongly linked to organizations that manage complex and dangerous technologies, such as the nuclear industry, understanding these concepts may assist law enforcement organizations in developing a comprehensive approach to implementing appropriate safety programs aimed at prevention.

1. Normal Accident Theory

Normal Accident Theory, developed in the 1980s by Yale sociologist Charles Perrow in the aftermath of the Three Mile Island nuclear tragedy, states that accidents are “normal” and are to be expected in some systems “characterized by interactive complexity and tight coupling among its components.”³⁶ The theory is built on the

³³ Gordon Graham, “Domestic Security 2015: Organizational Success and Leadership Challenges” (lecture handout, Fusion Center Leaders Program, Monterey, CA, 2015).

³⁴ Hirsch S. Ruchlin et al., “The Role of Leadership in Instilling a Culture of Safety: Lessons from the Literature,” *Journal of Healthcare Management* 49, (2004): 47–58; discussion 58–9.

³⁵ Ibid.

³⁶ J. H. Saleh et al., “Highlights from the Literature on Accident Causation and System Safety: Review of Major Ideas, Recent Contributions, and Challenges,” *Reliability Engineering and System Safety* 95 (2010): 1105–1116.

principles that people make mistakes and big accidents evolve from smaller events that spiral out of control.

Normal Accident Theory emphasizes that minimizing errors rather than avoiding them completely should be the goal of organizations because not all problems can be anticipated, especially in high-risk organizations like policing where unexpected variables often factor into response.³⁷ The key to improving safety and reducing injuries is to develop a thorough understanding of the precursors to accidents, and developing policies and programs to address them.³⁸ This is equivalent to the process of risk assessment and what law enforcement expert Gordon Graham recognizes as identifying problems lying in wait.³⁹

Throughout history, law enforcement agencies have operated at both ends of the spectrum regarding the acceptance of injuries in the workplace. Traditionally, little priority was placed on developing policies and programs to keep officers safe. The culture of police organizations simply accepted the high-rate of injuries and fatalities as a hazard of the profession. Even today, with an emphasis on improved officer safety and wellness, “there is a tendency to accept injuries as part of the job and a reluctance to do the type of analysis required to learn from mistakes.”⁴⁰

More recently, law enforcement agencies have recognized the significant impact of injuries and fatalities to organizational performance and employee well-being, and some professional police organizations are stressing the need to adopt a zero tolerance policy toward officer injuries. While the former approach led to preventable gaps in safety identification and mitigation, the latter sets up an unrealistic goal of perfection that cannot be achieved in the profession.

In private industry, zero-injury goals have long played a central role in workplace safety strategies. A dramatic shift has occurred over the past several years, however, as

³⁷ Ruchlin et al., “The Role of Leadership in Instilling a Culture of Safety,: 47–58; discussion 58–9.

³⁸ Ibid.

³⁹ Graham, “Domestic Security 2015.”

⁴⁰ Darrel Stephens and Leonard Matarese, “The Necessary Truths about Police Safety,” *Law and Order* 61 (2013), 82–87.

industries have become concerned with the concept of zero-injury goals due to widespread underreporting of near-misses, accidents and injuries.⁴¹ Zero-injury goals foster fear and anxiety on the part of the employee rather than a positive environment where employees can learn valuable lessons from near-misses and mistakes.⁴² The adoption of a zero tolerance policy toward injuries actually interferes with the development of a positive safety culture and can lead to negative outcomes, such as employees underreporting safety concerns due to fear of discipline.

Although not easily transferable or directly applicable to the policing profession, Normal Accident Theory provides a reasonable concept for law enforcement leaders to consider, given the inherent dangers of the profession, uncontrolled variables involved, and likelihood of injury from a variety of threats. Understanding that accidents, injuries, and fatalities may happen, learning from mistakes and close calls, and developing policies and programs that identify and minimize risks and hazards that do not unfairly punish employees, are necessary for improving the culture of safety within an agency.

2. Swiss Cheese Theory

Closely associated with Normal Accident Theory throughout literature, accidents are also described as occurring due to “holes in defenses.”⁴³ The Swiss Cheese Theory, developed in the 1990s by Manchester University professor James Reason, states that

although most defenses function as designed, they are more like slices of Swiss cheese, having many holes— though unlike the cheese, these holes are continually opening, shutting, and shifting their location. The presence of holes in any one “slice” does not normally cause a bad outcome. Usually, this can only happen when holes in many layers momentarily line up to permit a trajectory of accident opportunity—bringing hazards into damaging contact with victims.⁴⁴

⁴¹ Scott Merilatt, “How to Motivate Employees through the Language of Workplace Safety,” *EHS Today*, June 1, 2015.

⁴² Merilatt, “How to Motivate.”

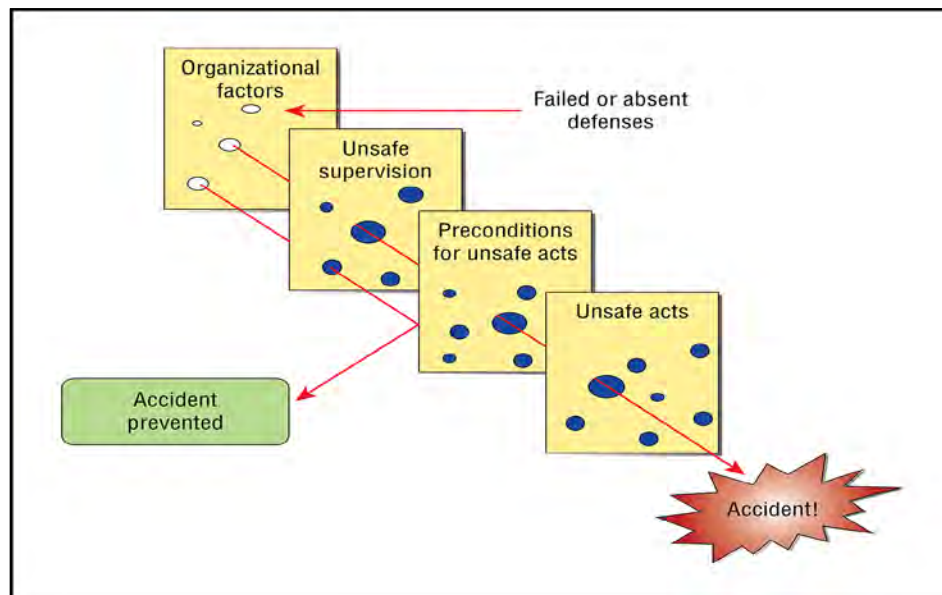
⁴³ Ruchlin et al., “The Role of Leadership, 47–58; discussion 58–9.

⁴⁴ Ibid.

The theory states that these holes occur through both active failures and latent conditions. Active failures are described as the conscious, unsafe acts employees commit while working, such as police officers who disregard a mandatory wear policy for seatbelts or bullet-proof vests, or drive too fast and without due regard for safety during response to emergency calls.

Latent conditions exist within an organizational system and arise through decisions, policies, and procedures created by management.⁴⁵ Examples of a latent condition in policing can be found in an agency's vehicle operations policy that does not provide repercussions for or restrictions on unacceptable driving behaviors. Such "latent conditions often lie dormant for many years before they combine with active failures resulting in accidents."⁴⁶ When this occurs, organizations must look at both the employee and the system for causation, mitigation, and future prevention. Figure 1 illustrates Reason's Swiss-Cheese theory of accident causation.

Figure 1. Swiss Cheese Model of Accident Causation



Source: Daniel Shouhed, Bruce Gewertz, Doug Wiegmann, and Ken Catchpole, "Integrating Human Factors Research and Surgery," *JAMA Surgery* 147 (2012): 2.

⁴⁵ Ibid.

⁴⁶ Ibid.

The concept of Reason's Swiss Cheese Theory has similarity to one posed by Gordon Graham, an expert on risk management in law enforcement. Graham describes accidents as occurring due to both a proximate cause and problems lying in wait.⁴⁷ Graham explains that often organizations attempt to assign blame on the specific incidents or behaviors that instantly precede the accident, known as the proximate cause. An example of a proximate cause would be an officer that injures a knee during defensive tactics training. Problems lying in wait are conditions in the organization that people knew or should have known about, but failed to act on. They are considered predictive, foreseeable conditions. In this scenario, the officer's injury occurred on a hard surface, where training was being conducted without protective mats. The accident then is the result of a combination of the proximate cause (officer injures knee in training) with problems lying in wait (inadequate training equipment).⁴⁸ Prevention can occur only by developing control measures, such as policies and procedures, to address those problems lying in wait and prevent similar incidents from occurring in the future.⁴⁹

3. High-Reliability Organization Theory

The High-Reliability Organization (HRO) viewpoint was developed through research conducted by a University of California-Berkley group from a field study "analyzing the factors leading to safe operations in high-risk organizations such as nuclear power plants, aircraft carrier flight decks, and air traffic control centers in the Federal Aviation Administration (FAA)."⁵⁰ These High-Reliability Organizations (HROs) "are characterized by placing a high cultural value on safety, effective use of redundancy, flexible and decentralized operational decision making, and a continuous learning and questioning attitude."⁵¹

⁴⁷ Gordon Graham, "American Law Enforcement 2015: Risk Management for Executives in Virginia Law Enforcement," presented at the Virginia Association of Chiefs of Police (VACP) Annual Conference at The Williamsburg Lodge in Williamsburg, VA, Aug. 30–Sept. 2.

⁴⁸ Graham, "American Law Enforcement 2015."

⁴⁹ Ibid.

⁵⁰ R. Bruce Matthews, *Safety Management of Complex, High-Hazard Organizations* (Washington, DC: Defense Nuclear Facilities Safety Board, 2004).

⁵¹ Matthews, *Safety Management*.

Advocates of the high-reliability viewpoint conclude that the implementation of certain key attributes by management plays an important role in reducing the likelihood of accidents.⁵²

HROs are said to be characterized by employees displaying a high level of technical competence; flexible decision-making processes; sustained performance; processes that reward the discovery and reporting of errors; equal value placed on reliable production and operational safety; and a sustaining institutional culture.⁵³

Safety is often not the primary goal of organizations, as other business or organizational goals, such as timely production or rapid service, are often “best achieved in ways that are not consistent with operating at low risk,” which can slow production processes or delay service delivery.⁵⁴ In policing, the goal or mission is to provide rapid and effective service and protection of the community. Officers typically perform their jobs in a productive manner, but often compromise personal safety in the process, taking unnecessary risks even when it is unnecessary or inappropriate to do so. In contrast, leaders in high-reliability organizations, place a priority on both performance *and* safety as organizational goals through the institution of various safeguards and policies.⁵⁵

Critics of the HRO Theory argue that the balance between performance and safety is not easily accomplished in some organizations, due to outside pressures for performance and goal achievement, impacting priorities that overshadow the need for rigid policies to ensure safety. Internal and external demands to get the job done can create a negative culture that compromises safety and increases the risk for accidents. In the policing profession, the goal of responding quickly to an incident often conflicts with the goal of arriving safely. Determining how to measure risk and setting standards for what is considered acceptable risk within an agency is critical to defining safety protocols.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Karen Marais, Nicolas Dulac and Nancy Leveson, “Beyond Normal Accidents and High Reliability Organizations: The Need for an Alternative Approach to Safety in Complex Systems,” paper presented at Engineering Systems Division Symposium, MIT, Cambridge, MA, March 29–31, 2004.

⁵⁵ Marais, Dulac and Leveson, “Beyond Normal Accidents and High Reliability Organizations.”

Although both Normal Accident and High-Reliability Organization Theories pose somewhat divergent viewpoints, both stress the importance of a strong safety management system and active involvement from leadership within the organization to reduce the risk of accidents and injuries.⁵⁶ Understanding these theoretical concepts, as well as other models of accident causation posed by Reason and Graham, can assist law enforcement leaders in assessing organizational problems and developing prevention programs to mitigate risk.

D. SAFETY CULTURE AND THE ROLE OF LEADERSHIP

Throughout the body of literature on occupational safety in the workplace, a positive safety culture has been identified as the most critical component for the success of any safety program in high-risk organizations. Leadership support and effective modeling of safety behaviors and practices are also identified as necessary to achieve a positive safety culture in the workplace.

No single, universally accepted definition for safety culture exists, although most definitions located share similar characteristics. Kim Sloat's definition is widely recognized in safety culture literature and states that the safety culture of an organization is the artifacts (things and written procedures), values (values, philosophies, goals and standards), and assumptions (unconscious beliefs of organizational culture) that people hold in common.⁵⁷ When discussing why safety programs fail, Sloat points out that the majority of safety programs involve changes solely at the artifact level. To make lasting change within an organization, efforts must also be consistent with the values or assumptions of the organization, or include ways to change them.⁵⁸

This is often evident in safety initiatives implemented in the law enforcement profession, where changes in written policies, regulations, and general orders alone often do not produce the changes in behavior intended by the directives. An example of this

⁵⁶ Ibid.

⁵⁷ Kim C. Sloat, "Why Safety Programs Fail ... and What to Do about It," *Occupational Hazards* 58 (1996): 65–72.

⁵⁸ Sloat, "Why Safety Programs Fail," 65–72.

can be seen in the lack of seat belt use throughout the profession. Despite state laws and agency regulations in existence, lack of seat belt use continues to pose a significant safety problem for law enforcement. Agencies that have improved seat belt usage have not only created directives to mandate their use, but also have conducted educational campaigns to encourage officer usage, and random checks and audits to gauge compliance and hold officers accountable.

Research shows that both in the policing profession and in private industry, the success of workplace safety programs is dependent on engaged and supportive leadership that places a priority on safety within an organization.⁵⁹ Employees are more likely to adopt and adhere to safety practices and procedures if leaders model these same behaviors within their organizations.⁶⁰ In addition to refining practices and protocols to improve safety, leaders at all levels within organizations must take a greater role in mitigating risk and exposure and creating a culture of safety. E. Kevin Kelloway, Jane Mullen and Lori Francis state in “Divergent Effects of Transformational and Passive Leadership on Employee Safety” that “when leaders actively promote safety, organizations experience better safety records and more positive safety outcomes.”⁶¹ A study on patterns of root cause in workplace injury conducted by Dodge indicated that leadership recognition and acceptance of their role in safety emerged as the single most important element in injury prevention.⁶²

As pointed out in the COPS publication *Making Officer Safety and Wellness Priority Number One*, despite the clear and important distinctions between policing and other professions, “core values that drive organizational life are at the heart of building a strong culture, whether the organization is an online retailer, manufacturing plant, or law enforcement agency.”⁶³ It can be argued that developing and maintaining a strong

⁵⁹ E. Kevin Kelloway, Jane Mullen and Lori Francis, “Divergent Effects of Transformational and Passive Leadership on Employee Safety,” *Journal of Occupational Health Psychology* 11 (2006): 76–86.

⁶⁰ President’s Task Force on 21st Century Policing, *Final Report of the President’s Task Force*.

⁶¹ Ibid.

⁶² R. Bruce Dodge, “Patterns of Root Cause in Workplace Injury,” *International Journal of Workplace Health Management* 5 (2012), 31–43.

⁶³ Hill et al., *Making Officer Safety and Wellness Priority One*, 1–72.

organizational culture that places an emphasis on safety is even more critical in law enforcement due to the variety of risks police officers face on a daily basis.

Establishing a culture of safety in law enforcement is the primary responsibility of police leadership, whose task it is to set priorities and ensure a consistent focus on safety-related issues. Rosa Antonia Carrillo indicates that “one of the strongest barriers to buy-in for safety efforts is a perceived lack of management commitment.”⁶⁴ According to Thomas Krause and Thomas Weekley, “one of the more fundamental roles of leadership in organizations relating to safety is enabling hazard elimination and control.”⁶⁵ Leaders must “establish an environment and a process where hazards are routinely examined to verify that the most effective and practical controls are applied” to reduce risk and exposure.⁶⁶ Heather Dilley and Brian Kleiner point out that cultural change takes time and must be approached in a systematic manner, instituting incremental changes over time. They also state that “it takes one to five years to change a culture so that safe behavior becomes second nature.”⁶⁷

Numerous cultural barriers to safety exist in the law enforcement profession and include the feeling of invincibility, the need to demonstrate toughness in realistic scenario-based training, the expectation to arrive quickly to emergency incidents, and the failure to seek mental health care due to the stigma of being labeled weak or unfit for duty. Officers are often conditioned through organizational culture to engage in these high-risk behaviors and put service over sacrifice. Establishing a positive safety culture requires an engaged leadership that not only sets safety policy and practices, but also models and reinforces them.

⁶⁴ Rosa Antonia Carrillo, “Safety Leadership: Managing the Paradox,” *Professional Safety* (2005): 31–34.

⁶⁵ Thomas R. Krause and Thomas Weekley, “Safety Leadership: A Four-Factor Model for Establishing a High-Functioning Organization,” *Professional Safety* (2005): 34–40.

⁶⁶ Krause and Weekley, “Safety Leadership,” 34–40.

⁶⁷ Heather Dilley and Brian H. Kleiner, “Creating a Culture of Safety,” *Work Study* 45(1996): 5–8.

E. SAFETY PROGRAMS IN LAW ENFORCEMENT

Over the past 10 years, a wide array of safety-related programs and initiatives have been developed in the policing profession for the purpose of reducing the number of officer related injuries and fatalities. Many of the programs, initiatives, and educational campaigns have developed through federal and national level law enforcement professional organizations such as the Bureau of Justice Assistance (BJA), Office of Community Oriented Policing Services (COPS), International Association of Chiefs of Police (IACP), Police Executive Research Forum (PERF), the Major City Chiefs Association (MCC), and the National Law Enforcement Officer's Memorial Fund (NLEOMF).

The BJA's Preventing Violence Against Law Enforcement and Ensuring Officer Resilience and Survivability (VALOR) Program is one such initiative that "assists law enforcement officers in responding to the increase in ambush-style assaults."⁶⁸ Through the VALOR Program, "officers receive training and technical assistance as well as detailed analyses of past attacks."⁶⁹ These encounters are examined through lessons learned and after-action reviews that are available through in person or web-based training seminars.⁷⁰

In response to the increasing number of officers killed by gunfire in the past 10 years, "the Bulletproof Vest Partnership (BVP) Program was developed by the BJA to assist law enforcement agencies in acquiring soft body armor for their personnel."⁷¹ Research shows that "body armor has saved the lives of more than 3,000 officers when they encountered a life-threatening situation."⁷² Funds are provided to state and local jurisdictions by the BJA to assist in purchasing protective vests when agencies agree to adopt mandatory body armor wear policies for their officers. Attaching the award of grant

⁶⁸ "What Is Valor," VALOR, accessed June 21, 2015, <http://www.valorforblue.org/Home/About>.

⁶⁹ "What Is Valor."

⁷⁰ Ibid.

⁷¹ Darrel Stephens, Mora L. Fiedler and Steven M. Edwards, *OSW Group Annual Summary: Issues and Recommendations Discussed for Improving the Well-being of Police Officers* (Washington, DC: Office of Community Oriented Policing Services, 2012).

⁷² Stephens, Fiedler and Edwards, *OSW Group Annual Summary*.

funding to mandatory body armor wear policies has increased the use of body armor nationwide.⁷³

Below 100 is a national safety program that was developed by a group of dedicated law enforcement trainers to target areas of risk in the profession that were considered within an officer's control, and in areas of the profession where a high number of line of duty deaths were occurring, such as response driving.⁷⁴ The course was developed after instructors reviewed thousands of line-of-duty death summaries and noticed trends in specific areas, and determined that many of these fatalities were preventable. The Below 100 program has evolved over time and is now managed by a non-profit organization that provides training to law enforcement agencies nationwide, with the goal of increasing safety and mitigating risk in areas where a large number of accidents and injuries are occurring.

In addition to dangers surrounding operation response, an increasing area for risk of injury or death in policing involves accidents during training. With advancements in technology, police trainers have developed more interactive and realistic training scenarios to better prepare officers for violent, physical encounters and develop strategies to de-escalate use of force incidents. With the increase in realism has come an increase in training injuries and fatalities.⁷⁵ The vast majority of police training accidents occur in defensive tactics and force on force classes.⁷⁶ The existence of a cultural attitude throughout law enforcement that training during force on force classes must be carried out in a manner to "toughen up" officers often leads to a lack of effective safety controls and injuries.⁷⁷ This has led to the development of the Training Safety Officer (TSO) Program.

⁷³ Ibid.

⁷⁴ Dale Stockton, "Officer Safety and Below 100," *Law and Order* 63 (2015): 50–52.

⁷⁵ Robert Boe and Randy Means, "Risk Management and Training Safety Officers," *Law and Order* (2014), 10–12.

⁷⁶ David Griffith, "Training Accidents," *Police* 37, no. 4 (2013), 47–51.

⁷⁷ Griffith, "Training Accidents," 47–51.

The TSO Program is a proactive effort to reduce training injuries and accidents by assigning a TSO to oversee the safety of the training session.⁷⁸ TSOs incorporate risk assessments, safety plans, safety briefings, inspections, and debriefing sessions into training exercises. TSOs are not involved in the actual training, but work closely with the instructional staff to deliver effective and safe training outcomes. Research from the IACP's study *Reducing Officer Injuries* supports the reduction of injuries in scenario-based training with the adoption of these practices, especially during training on arrest procedures and the use of force. Despite these findings, many law enforcement agencies do not incorporate formal TSO Programs into their training practices.⁷⁹

Examples of various safety programs that targeted specific police safety issues were discovered throughout this literature review. These programs were largely educational in nature such as LAPD's campaign to gain officer compliance on their policy regarding mandated seatbelt usage; Arlington (TX) Police's educational efforts and outreach to reduce agency accidents from distracted driving; and the Prince George's County (MD) Police's efforts to eliminate preventable traffic-related fatalities among its ranks by encouraging slower response driving and seatbelt use.⁸⁰ Other police safety programs exhibited by various agencies include respiratory protection programs, programs to control and manage exposure to bloodborne pathogens, physical fitness, and stress management programs.

Lastly, advances in technology have contributed to officer safety efforts through the development of less lethal technology. Implementation of tools such as electronic control devices, more commonly known as Tasers, have enabled officers to effectively control and subdue violent subjects without having to engage in a physical confrontation. This has reduced injuries to officers and subjects being placed under arrest or detained when individuals exhibit emotional instability requiring intervention. Advances in personal protective equipment, such as ballistic shields, respirators, chemical protective

⁷⁸ Robert Boe and Randy Means, "Risk Management and Training Safety Officers," *Law and Order* (2014): 10–12.

⁷⁹ Boe and Means, "Risk Management," 10–12

⁸⁰ Hill et al., *Making Officer Safety and Wellness Priority One*, 1–72.

suits, have also provided enhanced protection for officers during violent encounters and exposure to communicative disease. Not all law enforcement agencies, however, have access to or have adopted these tools due to budgetary constraints or political restrictions.

F. SAFETY PROGRAMS IN PRIVATE INDUSTRY

Different approaches to workplace safety have been proposed within private industry, and serve as important organizational components in the manufacturing, chemical, and nuclear sectors. Often the emphasis is on behavior-based safety programs, which focus on the worker rather than working conditions.⁸¹ James Frederick and Nancy Lessin describe behavior-based safety programs as those that “focus attention on worker carelessness and conscious or unconscious unsafe behaviors, and place the onus for a safe workplace on workers themselves.”⁸²

Although behavior-based safety programs were developed to achieve effective outcomes, opponents argue that the true incentive behind behavior-based safety programs is to discourage employees from reporting injuries in the workplace.⁸³ Research indicates that behavior-based safety programs have created environments of fear among employees who properly report unsafe behavior, fearing blame and reprisal from colleagues and management.⁸⁴ According to Frederick and Lessin, “peer pressure and pressure from management” to hide injuries and accidents contributes to the problem, “leaving health and safety problems untreated and underlying hazards uncorrected.”⁸⁵ These programs often include incentives and prizes for not reporting injuries, and threaten discipline or other disincentives for those that do.

⁸¹ James Frederick and Nancy Lessin, “Blame the Worker: The Rise of Behavioral-Based Safety Programs,” *Multinational Monitor* (2000): 10–17.

⁸² Frederick and Lessin, “Blame the Worker,” 10–17.

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ Ibid.

Incentive programs are similar to behavioral-based safety programs and can have similar unintended consequences for organizations if not managed properly.⁸⁶ Marc Resnick states that incentives can come in the form of extrinsic or intrinsic motivators.⁸⁷ Extrinsic motivators are best described as physical rewards such as bonuses, vacation days, or gift certificates. Extrinsic incentives can cause employees to hide accidents or misrepresent their performance.⁸⁸ Intrinsic motivators, conversely, are those that “have no explicit value but are linked directly to the personal need to be appreciated.”⁸⁹ Examples include publicly praising an individual for good work or an award for safe employee of the month. Research has shown that intrinsic rewards are more effective in embedding safety into the culture of an organization, thereby fostering a greater level of cooperation among employees.⁹⁰

From a safety regulation standpoint, what sets private industry and the federal government apart from state and local government is the Occupational Safety and Health Act of 1970. The Act is the primary federal law created to establish and enforce a broad range of occupational health and safety standards to protect American workers.⁹¹ The Act created the Occupational Safety and Health Administration (OSHA), whose jurisdiction is limited to private industry and federal agencies and does not apply to state and local government workers.⁹² Federal legislation, however, allows states to establish their own OSHA programs. State programs that are enacted must cover state and local government workers, and the regulations must be as stringent as those of OSHA.⁹³ OSHA monitors the effectiveness of all state programs to ensure compliance.

⁸⁶ Marc Resnick, “Safety Incentive Programs: Avoiding the Pitfalls,” *Professional Safety* (2009), 46–48.

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Ibid.

⁹⁰ Ibid.

⁹¹ James A. Covell, “Occupational Safety and Health and the Police,” *The Police Chief* 67 (2000): 188–190.

⁹² Ibid.

⁹³ Ibid.

States that have enacted OSHA programs have regulations that apply to state and local law enforcement agencies. Public safety generally falls into the general industry category, which includes mandates regarding personal protective equipment, respiratory protection, bloodborne pathogens, and the Hazardous Waste Operations and Emergency Response standard.⁹⁴ Law enforcement agencies must develop a comprehensive understanding of these state OSHA regulations to increase safety protocols and ensure compliance.

G. SAFETY PROGRAMS IN GOVERNMENT ORGANIZATIONS

Fire departments across the country adhere to the most comprehensive and standardized approaches to workplace safety programs in the public safety field. They utilize dedicated fire safety officers to oversee the safety of personnel during training and high-risk operations, as well as routine tasks throughout the organization.⁹⁵ The importance of the Health and Safety Officer and Incident Safety Officer has long played an integral role in the fire service. The role of safety officer is considered so critical in operations that the fire service is now considering moving toward mandatory nationwide certification.⁹⁶ Fire safety officers receive standardized training and certification through the Fire Department Safety Officers Association (FDSOA), a non-profit professional organization whose mission is “to promote safety standards and practices in the fire and rescue community.”⁹⁷

The fire service also established national standards through the National Fire Protection Agency (NFPA), another “nonprofit organization established to reduce death, injury and property loss due to fire or electrical hazards.”⁹⁸ NFPA Standard 1500 specifically required organizations within the fire service to “adopt occupational health

⁹⁴ Shawn Herron, “Does OSHA Apply to Law Enforcement?” *Kentucky Law Enforcement* (2013): 72–74.

⁹⁵ “Certification,” Fire Department Safety Officers Association, accessed Dec. 1, 2014, http://www.fdsOA.org/?page_id=135.

⁹⁶ “Certification.”

⁹⁷ *Ibid.*

⁹⁸ “NFPA Overview,” National Fire Protection Agency, accessed Oct. 6, 2015, <http://www.nfpa.org/about-nfpa/nfpa-overview>.

and safety programs designed to prevent injuries, illnesses, and fatalities.”⁹⁹ The fire service has also developed numerous programs to assist in evaluating firefighter injuries and fatalities, such as the Firefighter Fatality Investigation and Prevention Program. This program federally mandates the investigation of firefighter deaths to determine the cause and assist in the prevention of future incidents.¹⁰⁰ Law enforcement agencies’ injury and fatality reporting mandates do not compare in scope or detail to those in the fire service. The law enforcement profession could benefit from studying the comprehensive and proactive approach to workplace safety of their public safety fire counterparts.

The fire service has developed a variety of other safety initiatives and projects to reduce injuries and fatalities in the workplace. The Near Miss Project, sponsored by the IACF, was developed to “share lessons learned about incidents of injury producing behavior.”¹⁰¹ Based on a the system developed by the aviation industry that improved the safety record for air travel, the Near Miss Project is intended to better identify small errors before they can lead to accidents.¹⁰² The National Fallen Firefighters Foundation developed 16 Firefighter Safety Initiatives to improve the safety culture in the fire service.¹⁰³ These initiatives are listed on a website developed by the organization titled “Everyone Goes Home” and cover topics such as cultural change, risk management, response policies, fatality and near-miss investigations, and medical and physical fitness.¹⁰⁴

Due to many similarities between law enforcement and the military regarding operations and training in high-risk and rapidly evolving environments, an examination of military safety programs was conducted. Research indicates that the U.S. Army has

⁹⁹ James Koczan, *An Assessment of Workplace Health and Safety Programs* (Emmitsburg, MD: National Fire Academy, 1997).

¹⁰⁰ Vincent Dunn, “Safety in the Fire Service: The Effects of “Risk Management,” *Firehouse* 34 (2009): 26–32.

¹⁰¹ Lori Moore-Merrell et al., *Contributing Factors to Firefighter Line-of-Duty-Deaths in the United States* (Washington, DC: International Association of Firefighters, 2006).

¹⁰² Moore-Merrell et al., *Contributing Factors to Firefighter Line-of-Duty-Deaths*.

¹⁰³ “Everyone Goes Home: Firefighter Life Safety Initiatives,” National Fallen Firefighter Foundation, accessed Nov. 9 2015, <http://www.everyonegoeshome.com/16-initiatives/1-cultural-change/>.

¹⁰⁴ “Everyone Goes Home: Firefighter Life Safety Initiatives.”

taken a holistic approach to safety through both regulations and processes to guide behavior and manage risk. *The Army Safety Program* is a comprehensive manual of regulations and directives that addresses safety throughout the U.S. Army. The introduction to the manual prescribes “Department of the Army (DA) policy, responsibilities, and procedures to safeguard and preserve Army resources worldwide, to include Soldiers, Army civilians, and Army property against accidental loss.”¹⁰⁵ This detailed safety manual covers Army operations, training, and routine day-to-day functions across the entire organization.

The Army establishes composite risk management (CRM), also known as crew resource management, “as the Army’s principal risk reduction methodology and assures regulatory and statutory compliance.”¹⁰⁶ CRM, also utilized by other branches within the military and by the aviation industry, is intended “to minimize the effect that human error has on operations and enhance human performance.”¹⁰⁷ CRM is “the process used by crew members to identify existing and potential threats and to develop, communicate and implement plans and actions to avoid or mitigate perceived threats.”¹⁰⁸ Airplane crews began using CRM methods in order to avoid, manage, and mitigate human errors.¹⁰⁹ CRM programs were also found to improve crew morale and enhance operational efficiency.¹¹⁰ CRM has more recently been adopted by the fire service to enhance decision-making and reduce the number of line-of-duty injuries and fatalities.

Operational Risk Management (ORM), a related process used heavily by the U.S. Coast Guard, U.S. Navy, and by the aviation industry, is a risk management and decision-making tool for reducing the inherent risk in conducting military and flight operations and increasing operational effectiveness. The intent of ORM is to balance risk and

¹⁰⁵ Department of the Army, *The Army Safety Program: Rapid Action Revision* (Washington, DC: Department of the Army, 2010).

¹⁰⁶ Department of the Army, *The Army Safety Program*.

¹⁰⁷ “Making Air Travel Safer through Crew Resource Management,” American Psychological Association, accessed Nov. 11, 2015, <http://www.apa.org/action/resources/research-in-action/crew.aspx>.

¹⁰⁸ “Making Air Travel Safer.”

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

mission completion in all operations. The process involves six steps: identify hazards, assess risk, analyze control measures, make control decisions, implement risk controls, and supervise and review the controls once in place to ensure of their continued effectiveness.¹¹¹ The ORM process is also recommended by Gordan Graham to mitigate risk and enhance organizational performance in law enforcement agencies.

After-action reviews (AARs), a critical component of military safety programs, were first developed by the United States Army in the 1970s to provide detailed feedback to units on individual and collective performance and their relation to combat outcomes.¹¹² In addition to a detailed analysis of combat outcomes and unit performance, the AAR also included the identification of safety-related issues and areas that deserved special attention for training.¹¹³ The purpose was to sustain unit strengths and improve weaknesses in preparation for future response. The AAR is intended to be a method for teams to “reflect on and learn while performing.”¹¹⁴ Its goals are to “understand why interim objectives were not accomplished, what safety and performance lessons can be learned, and how those lessons can be quickly driven back into the performance process.”¹¹⁵

H. SYSTEMS THINKING

To understand the concept of systems thinking, it is important to understand what constitutes a system. The *Merriam-Webster Dictionary* defines a system as “a group of related parts that move or work together; a regularly interacting or interdependent group

¹¹¹ Federal Aviation Administration (FAA), “Operational Risk Management,” in *System Safety Handbook, Chapter 15: Operational Risk Management (ORM)*, 2000 (Washington, DC: FAA), https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/risk_management/ss_handbook/media/Chap15_1200.pdf.

¹¹² John E. Morrison and Larry L. Meliza, *Foundations of the After Action Review Process*. (ARI Special Report 42) (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1999).

¹¹³ Morrison and Meliza, *Foundations of the After Action Review Process*.

¹¹⁴ Lloyd Baird, Phil Holland, and Sandra Deacon. “Learning from Action: Imbedding More Learning into the Performance Fast Enough to Make a Difference.” *Organizational Dynamics* 27 (Spring 1999): 2–78.

¹¹⁵ Baird, Holland and a Deacon. “Learning from Action.”

of items forming a unified whole.”¹¹⁶ As defined by the *Oxford Dictionary*, a system is “a set of connected things or parts forming a complex whole.”¹¹⁷

The term “systems thinking” was first used in 1987 by Barry Richmond, a well-known leader in the field of systems dynamics.¹¹⁸ This “systems approach concentrates on the analysis and design of the whole as distinct from the parts.”¹¹⁹ Characteristics of systems thinking involve “long term planning, feedback loops between various components, and collaborative planning across all areas of an organization.”¹²⁰ Systems thinking is considered most effective on difficult problems such as “those involving complex issues; those that depend a great deal on the past or on the actions of others; and those stemming from ineffective coordination among those involved.”¹²¹ Utilizing a systems approach to understanding why accidents happen allows a more in depth analysis of accident causation by examining the interrelationships among the various components in the system.¹²²

According to law-enforcement risk management expert Graham, “adequate systems are necessary in organizations so that issues of importance can be recognized and prioritized.”¹²³ This includes systems to manage risk and safety across the organization. Graham states that “organizational risk management, or the management of the overall risks within an organization, and operational risk management, or the management of the risk of a specific incident, involve the proper development and full implementation of

¹¹⁶ *Merriam-Webster Online*, s.v. “system,” accessed Oct. 10, 2015, <http://www.merriam-webster.com/dictionary/system>.

¹¹⁷ *Oxford Dictionary*, s.v. “system,” accessed Oct., 24, 2015, http://www.oxforddictionaries.com/us/definition/american_english/system.

¹¹⁸ Ross D. Arnold and Jon P. Wade, “A Definition of Systems Thinking: A Systems Approach,” *Procedia Computer Science* 44 (2015): 669–678.

¹¹⁹ Marais, Dulac and Leveson, “Beyond Normal Accidents and High Reliability Organizations.”

¹²⁰ *Ibid.*

¹²¹ “Overview of Systems Thinking,” Thinking Page, accessed Oct. 25, 2015, http://www.thinking.net/Systems_Thinking/OverviewSTarticle.pdf.

¹²² Marais, Dulac and Leveson, “Beyond Normal Accidents and High Reliability Organizations.”

¹²³ Graham, *Domestic Security* 2015.

systems.¹²⁴ Graham further states that almost all successful organizations are organizations committed to systems.”¹²⁵

According to Karen Marais, Nicolas Dulac and Nancy Leveson, “a systems approach to safety recognizes that safety is a property of the system as a whole, not a property of individual system components.”¹²⁶ They further explain that “a systems approach takes a broader view of what went wrong with the organization to allow the accident to take place.”¹²⁷ As pointed out by Aronson, “the systems thinking approach contrasts with traditional analysis, which studies systems by breaking them down into separate elements.”¹²⁸ This fact suggests that law enforcement organizations should alter the way in which they currently address safety problems, taking a broader, systematic view of organizational safety as opposed to the traditional view of addressing safety solely in terms of officer behavior and a singular focus on targeted high-risk areas. The systems thinking concept will be applied to a recommended safety management system later in this thesis.

I. SUMMARY

This literature review was intended to represent a comprehensive examination of the issues surrounding law enforcement safety, identifying the current challenges and problems existing in the profession, and exploring the range and variety of safety programs existing in other high-risk organizations. Understanding why accidents happen and the role culture and leadership play in organizations with successful safety programs, were determined to be important in constructing recommendations for a safety management framework. Additionally, the identification of gaps in injury data collection and a systems thinking approach play a critical role in the ability to view safety comprehensively in organizations. Prior to exploring the law enforcement problem in

¹²⁴Graham, *Domestic Security* 2015.

¹²⁵ Ibid.

¹²⁶ Marais, Dulac and Leveson, “Beyond Normal Accidents and High Reliability Organizations.”

¹²⁷ Ibid.

¹²⁸ “Overview of Systems Thinking,” Thinking Page, accessed 10/25, 2015, http://www.thinking.net/Systems_Thinking/OverviewSTarticle.pdf.

more detail, the next chapter will discuss the methods with which this research was conducted.

III. RESEARCH DESIGN

A. OBJECTIVE

The focus of this research centered on the study of safety programs and practices utilized in high-risk organizations, with the goal of developing the framework for a comprehensive law-enforcement safety management system. Programs, policies, and smart practices from private industry and other government organizations, to include the military and public safety, were evaluated for their effectiveness, comprehensive approach, and potential applicability to the law enforcement profession. Understanding that law enforcement organizations vary widely in size and resources, the focus was on developing a recommended framework that is flexible in design, and capable of applying validated safety management strategies to both small and large agencies.

B. SELECTION

Government and private industry host a variety of safety programs to address and regulate hazards and unsafe behaviors within organizations. Many of the programs evaluated incorporate a systems approach to safety, ensuring coordination among organizational entities and a focus on overall risk management. These safety management systems address both safety processes and the behaviors of employees.

To recommend an effective safety management system for law enforcement, programs and systems in other high-risk professions were examined. Specific segments of private industry that operate in high-risk environments, such as the nuclear sector and chemical companies, rely on established safety protocols to reduce risk, prevent accidents and mitigate exposure to employees on a daily basis.

Other government organizations, such as the military, operate in a comparable high-risk, dynamic, and rapidly evolving operational environment similar to that found in the law enforcement profession. Examining safety protocols in military operations and training may prove valuable in identifying effective practices that can be adopted by law enforcement to reduce risk. Special emphasis was placed on the review of realistic

scenario-based training, risk management practices in operations, and regulations and standards.

The fire service also offered opportunities to examine best practices and effective safety protocols for working in high-risk operational and training environments. Fire department safety programs sparked particular interest for research due to their comprehensive and established safety programs, existing working relationship with law enforcement, and the continued development of safety as a specialized field within the fire profession. The fire service has a long-standing and formal safety officer program in place that incorporates dedicated resources to oversee the safety of its personnel and mitigate risk. As public safety partners, the value of sharing standardized safety practices on joint operations is critical, and expected under the Incident Command System (ICS). Examining the fire service's approach to safety from an organizational perspective may lead to recommendations for effective practices in the law enforcement field.

C. SCOPE AND LIMITS OF STUDY

A significant gap identified for the study of safety programs in the law enforcement profession is the lack of accurate data on accidents and injuries. Although statistics exist for officers killed and assaulted in the line of duty, no accurate database captures the number of line of duty injuries or accidents, or provides a validated list of the most frequent types of injuries that occur. A model safety program can be developed only with a comprehensive understanding of the type and frequency of injuries and accidents sustained in the line of duty, but this information remains largely unavailable.

Current law enforcement safety programs are often developed based on line-of-duty death statistics, but these numbers are significantly smaller for statistical analysis in comparison to the number of accidents and injuries experienced in the profession. Until a national database is developed that captures accurate statistics on officer accidents and injuries, the true extent of the problem will remain unknown, and areas that demand focus will not be identified. In addition, there is a need for agencies to recognize specific injury and accident trends that may be unique to their organization or region.

The scope of this thesis is not to focus on a variety of singular and specific programs to address targeted risks, but rather on the development of a system or framework that would incorporate a comprehensive risk management approach to safety. As an example, response driving has been identified as a high-risk behavior that should be targeted in a model law enforcement safety program. This thesis, however, will not evaluate the effectiveness of individual response driving programs, but instead identify recommended system components that can be incorporated in a global program to address all such high-risk behaviors.

D. DATA SOURCES

Data and evidence for this thesis was obtained from secondary source material that exists in published statistics, case studies, internal reports and reviews, as well as academic journal articles on safety management systems and programs in both private and public organizations. This researcher also possesses significant experience in law enforcement, and in the application of safety programs within the profession, providing personal knowledge and insight into numerous issues raised throughout the research.

E. METHODOLOGY

The analytical steps involved in building the framework for a law-enforcement safety management system will begin with establishing a clear description of the need for an increased focus on safety in the profession. Need will be demonstrated through available fatality, injury, and accident statistics, as well as examples provided from actual incidents where preventable accidents and injuries have occurred.

The next step will involve a comprehensive literature review identifying the most common and frequent types of risk experienced by police officers, followed by a description and evaluation of various safety programs in the law enforcement profession today. Best practice research of safety programs in high-risk organizations in private industry, the fire service, and the military will then be conducted to determine effective practices and common components. Research into why accidents happen and how a systems approach can be applied to safety management will be also examined. An analysis will then be made of all programs studied; various models and smart practices

will be identified; and commonalities recognized will be noted that could be effectively applied to form a recommended safety management framework.

F. OUTCOMES

The intended outcome for this research is to recommend the framework for a model safety management system that will contribute to the goal of reducing injuries and fatalities in the law enforcement profession. Law enforcement agencies, regardless of size, should be able to adopt and apply this framework to their organization, using identified and recommended smart safety practices and common components that form the basis of an effective safety management system. The research will also attempt to demonstrate how this approach provides value over the current practice of law enforcement safety programs in use today that narrowly address areas of targeted risk and often operate in organizational silos.

The following chapters of this thesis construct an argument for a systematic and comprehensive approach to law enforcement safety. Chapter IV identifies the current problem through an examination of the role of culture and leadership on safety, identification of the leading risks in law enforcement, current gaps in the profession regarding injury and accident data, and how performance metrics are used to measure safety in current programs. Chapter V explores possible solutions through an examination of current safety programs, practices, and models in law enforcement, the fire service, private industry and the military. An analysis of this research is conducted in Chapter VI and findings discussed, with numerous issues identified for further study and development. Recommendations toward developing a systems approach to law enforcement safety are offered in Chapter VII, to assist law enforcement agencies in applying a comprehensive framework to safety management and reducing line-of-duty accidents and injuries.

IV. IDENTIFYING THE PROBLEM

A. SAFETY CULTURE

Safety culture has long been recognized by research as having a significant impact on the safety performance of organizations. A culture of safety takes years to develop, but in time becomes deeply engrained in an organization, influencing and driving the employee's daily attitudes, behaviors, and values. The literature contains many different definitions of safety culture, all with some common elements, however, United Kingdom's Health and Safety Commission offers one of the most comprehensive, describing it as

the product of individual and group values, attitudes, competencies and patterns of behavior that determine the commitment to and the style and proficiency of an organization's safety and health programs. Organizations with a positive safety culture are characterized by communications founded on mutual trust, shared perceptions of the importance of safety, and confidence in the efficacy of preventive measures.¹²⁹

A less technical definition describes culture as

the invisible force behind the tangibles and observables in any organization, a social energy that moves people to act. Culture is to an organization what personality is to the individual—a hidden, yet unifying theme that provides meaning, direction, and mobilization.¹³⁰

The term "safety culture" was created after the Chernobyl nuclear disaster in 1986, which was "caused by a breakdown in the plant's attitude and approach toward operational safety."¹³¹ The Challenger and Columbia space shuttle disasters led NASA to conduct extensive studies on the safety culture within its organization, concluding, "While training, awareness, and incentive programs can result in short-term changes, it is

¹²⁹ Dominic Cooper, "Safety Culture: A Model for Understanding and Quantifying a Difficult Concept," *Professional Safety* (2002).

¹³⁰ Ruchlin et al., *The Role of Leadership in Instilling a Culture of Safety: Lessons from the Literature*, 47–58; discussion 58–9.

¹³¹ M. S. Mannan, Ray A. Mentzer and Jiaqi Zhang, "Framework for Creating a Best-in-Class Safety Culture," *Journal of Loss Prevention in the Process Industries* 26, no. 6 (11, 2013), 1423–1432.

the underlying culture that must be supportive for sustainable improvement on safety to occur.”¹³²

Instilling a positive safety culture requires a multifaceted approach. It includes the goal of “reducing accidents and injuries, ensuring that safety-related issues receive prompt attention, developing shared beliefs among members about risk and safety, and determining the style and efficiency of safety programs within organizations.”¹³³ As quoted in Cooper’s article on *Safety Management in the Emergency Response Services*, Dilley and Kleiner contend that “creating a culture of safety means that employees are constantly aware of the hazards and risks within the workplace, including ones they create themselves.”¹³⁴

Organizations operating with a positive safety culture include a synthesis of recognized best practices in policy development and standard operating procedures, focusing on both people and processes, which comprise an effective framework for safety within the organization. M.S. Mannan, Ray A. Mentzer and Jiaqi Zhang developed a number of attributes for a comprehensive Best-in-Class safety culture after years of studying a wide range of different organizations with successful, effective programs.¹³⁵ Although not always discussed and listed collectively, these specific attributes have been identified throughout this research as common to effective safety programs across all organizations, and have direct application to the law enforcement profession. The Best-in-Class safety attributes identified through the study are listed in Figure 2.

¹³² Ibid.

¹³³ Cooper, “Safety Culture.”

¹³⁴ Mark Cooper, “Safety Management in the Emergency Response Services,” *Risk Management* 2 (2000): 39–49. <http://www.jstor.org/stable/3867856>.

¹³⁵ Mannan, Mentzer and Zhang, “Framework for Creating a Best-in-Class Safety Culture,” 1423–1432.

Figure 2. Best-in-Class Safety Attributes



Source: M. S. Mannan, Ray A. Mentzer and Jiaqi Zhang, “Framework for Creating a Best-in-Class Safety Culture,” *Journal of Loss Prevention in the Process Industries* 26 (2013): 1424.

1. Organizational Theory

As quoted in an article by Kim Sloat, Edgar H. Schein describes the culture of an organization as existing on three levels: artifacts, values, and assumptions.¹³⁶ Artifacts represent both things and written procedures, and in a safety culture are represented by signs, posters, personal protective equipment (PPE), as well as rules and regulations regarding safety protocols. Values represent the adopted safety values of the organization such as mission statements, goals, and principles; they “are the reasons given to explain the artifacts.”¹³⁷ Assumptions represent the unconscious beliefs of an organization’s safety culture. These unconscious beliefs often become so ingrained by members of the group that they are not questioned. When these three levels are viewed collectively from Schein’s perspective, “the safety culture of an organization can be described as the shared

¹³⁶ Sloat, “Why Safety Programs Fail.”

¹³⁷ Ibid.

artifacts, values and assumptions that people hold in common.”¹³⁸ Figure 3 illustrates Schein’s three-layer culture model.

Figure 3. Schein Culture Model



Source: Emergent Solutions, “Organizational Culture and Change Management.” Last modified April 9, 2013. <http://www.esodl.com/esodl/2013/04/organizational-culture-and-change-management.html>

In both the police and firefighting professions, Schein’s model outlining three levels of organizational culture can be applied to explain behavior. The existing assumptions and beliefs held by officers and firefighters in the organization reinforce the cultural values that are adopted by the employees. This then leads to behaviors of unacceptable risk within the organizations, leading to an increase of accidents and injuries.¹³⁹ Examples of cultural values common to both professions that lead to unacceptable risk include line-of-duty deaths that are automatically labeled as heroic, regardless of whether they are preventable; driving in a reckless manner that endangers the life of the first responder or the community in order to quickly arrive at the scene of an emergency; resistance to wearing seat belts due to the belief they will hinder the ability to quickly exit the vehicle to address a threat; desire to show “toughness” during

¹³⁸ Ibid.

¹³⁹ Ibid.

scenario-based training exercises; and resistance to efforts of promote various health and safety initiatives.¹⁴⁰

Organizations operating with an effective culture of safety go far beyond simply complying with established safety practices, rules, and regulations. Organizations exhibiting a positive safety culture are also said to operate with an informed culture. As quoted in an article by Hirsch Ruchlin et al., James Reason states that an informed culture contains several different components, which he lists as reporting, just, flexible, and learning.¹⁴¹ These components, Reason argues, are “critical to the effectiveness of any safety management system.”¹⁴²

Reason describes a *reporting culture* as an organizational climate where employees are not only encouraged and expected to report accidents and near misses, but do so as a matter of practice.¹⁴³ A *just culture* supports and may even reward the reporting of safety-related concerns, without the fear of unwarranted or excessive discipline. In law enforcement, a *flexible culture* proves even more important, allowing lower levels in the organizations, such as patrol officers, to exert individual control over emergency situations and resolve safety concerns, without first referring to upper levels of command: “Taking control of problems when they become immediately apparent, without waiting for direction from management, is a definitive sign of an organization with a strong safety culture.”¹⁴⁴ Organizations with an informed culture also adopt *continuous learning* as a concept, to improve safety, operations, and efficiencies. Examples of continuous learning organizations in law enforcement are those that utilize near miss reporting, safety and incident debriefing sessions, and after-action reports to improve safety practices.¹⁴⁵

¹⁴⁰ Griffith, “Training Accidents,” 47–51; U.S. Fire Administration, *National Safety Culture Change Initiative: Study of Behavioral Motivation on Reduction of Risk-Taking Behaviors in the Fire and Emergency Service* (Emmitsburg, MD: U.S. Fire Administration, 2015).

¹⁴¹ Ruchlin et al., *The Role of Leadership in Instilling a Culture of Safety*, 47–58; discussion 58–9.

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

Examining organizations in the context of Theory X and Theory Y can also assist in understanding organizational culture. Law enforcement agencies have traditionally operated as Theory X organizations, identified as having a culture of blaming individuals for management control failures, and making excessive use of discipline and regulations.¹⁴⁶ Theory X organizations operate on the principle that employees are not self-motivated and need to be ordered to comply with regulations and policies. This premise has led to the creation of an abundance of general orders, standard operating procedures, and other regulations guiding the everyday tasks of police officers.

Alternatively, Theory Y organizations operate on the premise that employees are self-motivated, want to influence decisions and be involved, and use their skills and abilities to serve their organization effectively.¹⁴⁷ Achieving a positive safety culture involves gaining employee engagement at all levels, where safety behaviors are exhibited because they are valued, not because they are policy. Theory Y organizations are far more likely to be successful in developing positive cultural change within the ranks.¹⁴⁸

2. Role of Leadership

Leadership plays a critical role in the development of a positive safety culture within organizations, and can negatively affect even the best safety management systems and programs in operation. Krause and Weekley state “a leader who is credible and who places a high value on safety not only personally pays more attention to safety improvement, but also influences others to do so.”¹⁴⁹ According to Schein, leaders create culture by what they pay attention to, how they model behavior, and what they deal with, not by what they say.¹⁵⁰ As quoted in *Divergent Effects of Transformational and Passive Leadership on Employee Safety*, David Hofmann and Frederick Morgeson found that “high-quality leader-member exchange contributed to improved safety communication

¹⁴⁶ Cooper, “Safety Management,” 39–49.

¹⁴⁷ Ibid.

¹⁴⁸ Ibid.

¹⁴⁹ Krause and Weekley, *Safety Leadership*, 34–40.

¹⁵⁰ Andrew Hopkins, *Safety Culture, Mindfulness and Safe Behavior: Converging Ideas?* (Canberra, Australia: The Australian National University National Research Centre of OHS Regulation, 2002).

and safety commitment, which in turn contributed to reduced accidents and injuries.”¹⁵¹ Literature strongly supports the premise that organizations experience better safety results when leaders actively promote and place a priority on safety in the workplace.

The role of leadership in organizational safety involves “reducing exposure to risk and creating a favorable climate and culture for safety.”¹⁵² Leaders must not only set expectations for safety, but must role model the same behaviors to create buy-in from their employees. As Carrillo found, “employees have identified perceived lack of management commitment as one of the strongest barriers to support for organizational safety efforts.”¹⁵³ Effective safety leadership involves not only managing safety objectives and policies, but also influencing culture to enhance an organization’s commitment to safety. To advance safety and prompt lasting cultural change, leaders must define and uphold safety as a core value of the organization, not simply a program. This can be accomplished by ensuring safety is a central element of all tasks, projects, plans and operations.¹⁵⁴

Patrick Hudson created a Health, Safety and Environment (HSE) Management System Cultural Ladder, defining a “pathway from less to more advanced safety cultures within organizations.”¹⁵⁵ This model, depicted in figure four, reflects the attitudes and values found in organizations at various levels of safety culture, and suggest that proactive leadership is critical to achieving a positive culture of safety.

¹⁵¹ Kelloway, Mullen and Francis, *Divergent Effects of Transformational and Passive Leadership on Employee Safety*, 76–86.

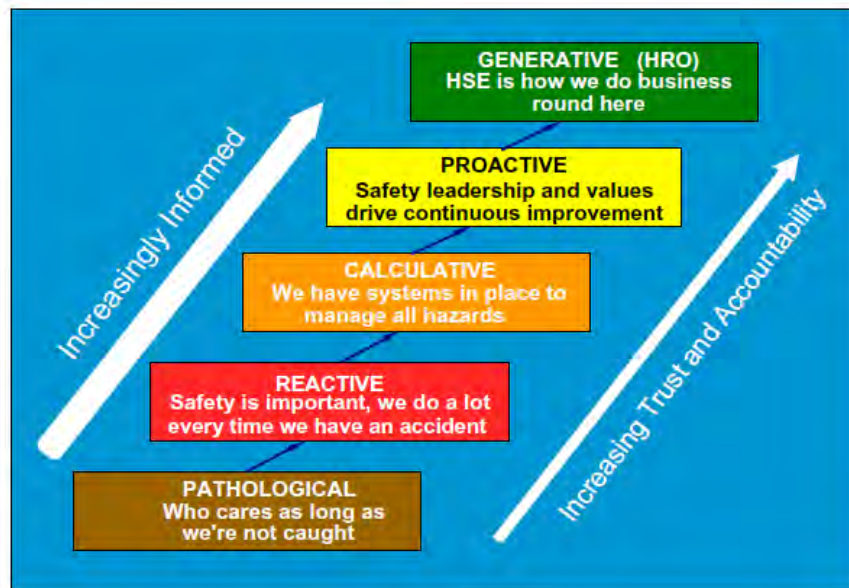
¹⁵² Krause and Weekley, *Safety Leadership*, 34–40.

¹⁵³ Carrillo, *Safety Leadership: Managing the Paradox*, 31–34.

¹⁵⁴ David J. Sarkus, “Advancing the Servant-Leadership in Safety,” *Professional Safety* (1996): 27–32.

¹⁵⁵ Patrick Hudson, “Implementing a Safety Culture in a Major Multi-National,” *Safety Science* 45 (2007): 697–722.

Figure 4. HSE Management System Cultural Ladder



Source: Patrick Hudson, "Implementing a Safety Culture in a Major Multi-National," *Safety Science* 45 (2007): 704.

Safety leadership must be modeled and reinforced at all levels of police organizations, both in upper management and at the first-line supervisor level. Unsafe behaviors often appear at the line level, where the need to reinforce safety becomes critical. If left unaddressed by first-line supervisors, these risky behaviors can negatively affect newer and more impressionable officers who learn to model these behaviors.¹⁵⁶ These behaviors then become a routine and accepted practice that contributes to a negative safety culture within the organization.

This concern has been identified in law enforcement Field Training Instructor (FTI) programs, where irresponsible FTIs sometimes model and teach improper tactics and techniques that unnecessarily increase exposure to risk, such as not wearing seatbelts. Reinforcing these negative behaviors can lead to life-long habits that jeopardize both officer and community safety. Effective FTIs who contribute to positive safety cultures continually look for unsafe behaviors and promptly correct them, do not cut corners on safety tactics or techniques, and readily admit their own safety errors when making

¹⁵⁶ Garner, Gerald. "Management's Role in Officer Safety." *The Journal* (2010): 79–81.

mistakes.¹⁵⁷ Ensuring proper safety leadership at all levels in the organization is critical to developing an effective safety culture.

Research on the relationship between leadership style and safety results suggests that transformational leaders elicit better safety outcomes in organizations.¹⁵⁸ Transformational leaders are described by Krause and Weekley as having four dimensions challenging, engaging, inspiring and influencing.¹⁵⁹ These directly translate to creating an effective safety culture by

challenging employees to develop new ways of thinking and addressing safety-related problems; engaging employees by coaching, mentoring and providing feedback; inspiring commitment in employees by role modeling safe behaviors and communicating a vision for safety within the organization; and influencing all levels of the organization by building a sense of commitment towards a safe work environment and gaining respect and trust.¹⁶⁰

Leadership also plays a role in identifying hazards in the workplace. The challenge for leadership is to “establish an environment and a process where hazards and risks are identified and routinely examined to ensure the most effective and practical controls are in place.”¹⁶¹ Although elimination of hazards is preferred, it is not often possible in policing. As a result, instituting effective controls becomes critical to reducing risk and exposure to threats. Leaders exhibiting effective safety leadership understand this key function and ensure employees have proper safety equipment, practices, policies, and training in place to reduce accidents and injuries. Leadership must then conduct audits to ensure that employees are following proper protocols.

In some organizations, especially in private corporations where profit depends on production, leaders have to carefully balance the polarity between safety and productivity or performance. Failure to manage this paradox properly can have a negative effect on workplace safety programs and lead employees to believe that leadership is more

¹⁵⁷ Garner, “Management’s Role in Officer Safety,” 79–81.

¹⁵⁸ Krause and Weekley, *Safety Leadership*, 34–40.

¹⁵⁹ Ibid.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

committed to performance than to safety outcomes, leading to increased accidents and injuries.¹⁶² According to Carrillo, “leaders who are able to talk intelligently about the ethical issues that underlie polarities are better able to inspire and motivate employee commitment to safety.”¹⁶³ This safety paradox is not limited to private industry, but also found in public safety agencies where limited resources, training mandates, and political and community priorities often drive decision-making and generate pressure to accomplish tasks. Understanding and discussing the polarity principle assists leaders with balancing situations involving safety in the workplace.

How leaders handle accidents and injuries also plays a critical role in establishing an effective safety culture in organizations. Leaders must develop a culture of accountability, not blame, in addressing safety-related incidents.¹⁶⁴ “Accountability is considered a best practice that is found in high-functioning organizations and differs from simply placing blame for mistakes.”¹⁶⁵ Accountability entails not only addressing individual unsafe behaviors, but also addressing organizational issues through methodical incident investigations to determine if other issues may be contributing to accidents, in order to make improvements and reduce future risk.¹⁶⁶ Leaders who focus on holding employees accountable as opposed to placing blame instill credibility and support for safety programs and practices.

B. AREAS OF RISK TO LAW ENFORCEMENT SAFETY

Several common areas of risk have been identified throughout literature as leading contributors to the number of accidents, injuries, and fatalities occurring in the law enforcement profession. The Officer Safety and Wellness Group (OSW), formed by COPS and BJA to compile and share information that reduces risks, increases safety, and enhances wellness in the policing profession, listed four key themes for safety in a 2014

¹⁶² Carrillo, *Safety Leadership: Managing the Paradox*, 31–34.

¹⁶³ Ibid.

¹⁶⁴ Krause and Weekley, *Safety Leadership*, 34–40.

¹⁶⁵ Ibid.

¹⁶⁶ Ibid.

report: operational and emergency response, leadership and management, mental and physical health and wellness, and training.¹⁶⁷

Other contributing factors commonly discussed include a negative safety culture, driving and traffic related incidents, and stress and heart attacks. Although firearm incidents and encounters are also listed throughout current literature as a priority for safety, for the purpose of this research, the focus of inquiry was on those areas where agencies and officers have substantial control over safety-related outcomes and behaviors.

1. Culture

Culture remains a top priority due to its influence on and ability to impact all other efforts at safety within the profession. A negative safety climate can counteract the effectiveness of sound safety management programs in an organization. Organizations develop two ways of getting work done: official protocols and systems that guide behaviors and performance, and actual practices that become routine and institutionalized as a result of the culture within the organization. This culture becomes the accepted way to operate, often creating a divergence between management and those carrying out operational tasks.¹⁶⁸ When organizational culture operates outside the guidance of safety programs and protocols, the risk of injuries and accidents increases.

High-profile professional organizations within law enforcement and the fire service have identified culture as a critical area in need of attention. The International Association of Chiefs of Police (IACP), Police Executive Research Forum (PERF), Office of Community Oriented Policing (COPS), National Law Enforcement Officer's Memorial Fund (NLEOMF), International Association of Fire Chiefs (IAFC), National Fallen Firefighters Foundation (NFFF), and the International Association of Fire Fighters (IAFF), have all published documents identifying culture as a contributing factor in line of duty injuries and fatalities, and supporting the need to conduct additional research into the issue.

¹⁶⁷ Hill et al., *Making Officer Safety and Wellness Priority One*, 1–72.

¹⁶⁸ McDonald et al., "Safety Management Systems," 151–176.

Law enforcement has a strong sub-culture operating within the profession that leads to increased risk of injuries and fatalities. As described by Darrel Stephens and Leonard Matarese, “in policing, there is a tendency to accept injuries as part of the risk of the job and a reluctance to do the type of analysis required to learn from mistakes.”¹⁶⁹ Annual LEOKA data and interviews with peers and supervisors of officers accidentally killed in the line-of-duty reveal the emergence of several common cultural characteristics that are attributed to LODDs, including an “It will never happen to me” mindset, and a feeling of invincibility regarding the possibility of on duty accidents.¹⁷⁰ This attitude of invincibility often leads to a higher level of risk taking in both operations and in the training environment, where officers often feel the need to impress their peers.

Additionally, high-risk behaviors that result in successful outcomes are often rewarded and publicized by law enforcement agencies, touting them as heroic. In addition, LODDs are almost always given heroic sendoffs, even if the fatality results from officer negligence or inappropriate behavior. These are examples of law enforcement cultural characteristics that may contribute to risk-taking behavior, where officers often put service and sacrifice above safety in pursuit of such recognition.¹⁷¹

Law enforcement culture has also stigmatized the treatment of mental health problems within the profession. Support for the acknowledgement and treatment of emotional issues has been lacking or inconsistent at best, and officers often brand the need for such treatment as a sign of weakness. Officers also worry about the impact treatment will have on their permanent record, how they will be judged by their peers, and whether they will be labeled unfit for duty. Mandated policies for mental health referrals, education on the growing mental health issues in the profession, and the effective handling of mental health incidents by leadership can have a significant, positive impact on eliminating the stigma associated with seeking help.

¹⁶⁹ Stephens and Matarese, *The Necessary Truths about Police Safety*, 82–87.

¹⁷⁰ Anthony J. Pinizzotto, Edward F. Davis and Charles E. Miller, “Accidentally Dead: Accidental Line-of-Duty Deaths of Law Enforcement Officers,” *FBI Law Enforcement Bulletin* 71 (2002): 8–13.

¹⁷¹ Pinizzotto, Davis and Miller, “Accidentally Dead,” 8–13.

Cultural issues affecting other public safety first responders were also examined to determine if similar trends existed, and what strategies were being implemented to address them. Research suggests that uniformed professions such as police, fire, and the military, have unique cultures and characteristics, such as a profound sense of duty and dedication that are uncommon to other professions, and a feeling of general isolation from other professions within society.¹⁷² As local first responders, firefighters work in similar high-risk and unpredictable environments, and face a multitude of safety-related challenges similar to those of police officers. As noted in the *National Safety Culture Change Initiative Report*, research shows that firefighters experience on average 90,000 injuries per year and 100 line-of-duty deaths.¹⁷³ Duty-related annual fatality statistics for law enforcement are somewhat similar to those in the fire service, but an accurate comparison of injury statistics cannot be made due to the absence of injury data available on police officers.

To better address firefighter LODDs and injuries, FEMA recently published a report in April 2015, discussing the impact of organizational culture on firefighter safety. The National Safety Culture Change Initiative (NSCCI) project was a partnership of the U.S. Fire Administration (USFA) and the International Association of Fire Chiefs (IAFC) “aimed at identifying both positive and negative culture and climate found in the American fire and emergency services community.”¹⁷⁴ The report identified and focused largely on the negative cultural aspects that have contributed unnecessarily to firefighter injuries and deaths, and recommended strategies to address behavioral changes to improve safety.

Within the NSCCI report, many of the same concerns for firefighter safety and cultural issues were discovered as those affecting police officers. Numerous areas of safety were identified by the NSCCI report that shares commonalities with safety in the law enforcement profession. These are considered priorities for attention and include “situational awareness, individual responsibility, leadership, health and wellness,

¹⁷² U.S. Fire Administration, *National Safety Culture Change Initiative*.

¹⁷³ Ibid.

¹⁷⁴ Ibid.

training, vehicle operations, and seat belt usage.”¹⁷⁵ The report also identified that behavioral issues were a contributor to both firefighter injuries and LODDs, and that “cultural change is needed to alter the perceptions of acceptable and unacceptable risks.”¹⁷⁶

Fire departments, like police departments, function as individual organizations within the framework of a larger organizational culture, with common themes and values present.¹⁷⁷ In line with the police officer image, “the image of the firefighter was built around selfless heroism, ready to make the supreme sacrifice in order to save lives and property.”¹⁷⁸ Community expectations of “urgent and timely response to emergencies and disasters, with fully trained personnel,” further drive this expectation.¹⁷⁹

Research into the culture of firefighters through the NSCCI project has shown similar findings to those of the law enforcement profession. As quoted in the NSCCI report, Sue Lewis, a scholar studying gender and racial inequity issues in firefighter selection and training, has shown the culture of firefighting has demonstrated “disturbing and uniform characteristics that have been normalized under the guise of tradition.”¹⁸⁰ David Archer states that “cultural processes are introduced to firefighters when they go through their initial training.”¹⁸¹ These “traditions” and cultural attributes are believed to have a significant impact on decision-making.

According to H. Cross, a subject matter expert who was a contributing author on the publication titled *Understanding and Implementing the 16 Firefighter Life Safety Initiatives*, “firefighter fatalities are closely linked to unsafe practices and a culture that is not fully committed to safety.”¹⁸² This point is reinforced by a study conducted between

¹⁷⁵ U.S. Fire Administration, *National Safety Culture Change Initiative*.

¹⁷⁶ Ibid.

¹⁷⁷ Ibid.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Ibid.

¹⁸¹ David Archer, “Exploring Bullying Culture in the Para-Military Organization,” *International Journal of Manpower* 20 (1999): 94–105.

¹⁸² U.S. Fire Administration, *National Safety Culture Change Initiative*, 1–27.

1973 and 2007 that showed a “44 percent reduction in the number of civilian deaths related to fire, and a 40 percent reduction of fires overall.”¹⁸³ During this same time period, however, “there was no reduction in the number of firefighters who died in the line of duty, suggesting that the root cause for many firefighter fatalities may be related to cultural attributes.”¹⁸⁴

2. Training

Most training accidents share one common characteristic—they are preventable.¹⁸⁵ Realistic scenario-based training has become a significant contributor to injuries and accidents in the law enforcement profession. Although training accidents involving firearms are more likely to lead to fatalities, the majority of serious training accidents in law enforcement occur in defensive tactics and physical control classes.¹⁸⁶ These accidents are attributed to numerous factors, including inadequate or nonexistent safety equipment, poor safety protocols, unclear objectives, and the lack of dedicated safety officers to oversee training exercises.¹⁸⁷

It is common knowledge that training accidents and injuries are frequent in the profession. Scenario-based training causes an increased risk for injury, and law enforcement agencies often do not apply the same risk assessment procedures and dedicated safety resources to the training environment that they do on operations, sometimes resulting in tragic outcomes. Agencies also struggle with determining what level of risk they are willing to accept in the training environment, an issue that is deeply affected by culture. An approach that prohibits scenario-based training will avoid increased liability and enhanced risk to its personnel, but will not properly prepare its officers for the realistic threats they will face on the street, as well as the quick decisions they will be forced to make. This approach can have a negative impact on both officer and community safety.

¹⁸³ U.S. Fire Administration, *National Safety Culture Change Initiative*, 1–27.

¹⁸⁴ *Ibid.*

¹⁸⁵ Griffith, “Training Accidents,” 47–51.

¹⁸⁶ *Ibid.*

¹⁸⁷ *Ibid.*

Although a zero-tolerance policy for fatalities in training is necessary, applying that same policy to injuries is not reasonable given the need to provide officers with realistic scenarios that best prepare them to respond effectively to physical encounters and other high-risk challenges. Finding a balance between providing realistic training programs and safety, and determining what level of risk is acceptable, continues to be a difficult challenge for law enforcement agencies nationwide.

Kat Kelly describes numerous causative factors attributed to accidents in the law enforcement training environment: technological advancements, administrative barriers, training plan deviations, and inexperienced trainers.¹⁸⁸ The advancement of technology has allowed law enforcement to enhance scenario-based training, which exposes officers to controlled danger or elevated risk in order to better prepare them for real events. Areas where scenario-based training is commonly conducted in law enforcement include firearms-related training, force-on-force training, active-shooter training, defensive tactics, and response or pursuit driving. The closer that training scenarios approach reality, the more dangerous the training is to the participants. Although computer simulation equipment has enabled certain professions to enhance training and decision making in a safe environment, such as the aviation industry, the equipment is costly and often impractical in today's public safety budgets. Additionally, many tasks require hands-on, interactive training with other participants to develop specific skills.

Administrative barriers can create even greater challenges to conducting needed training for law enforcement agencies. Economic downfalls have created significant cuts in police department budgets, and training is often the first area to be impacted. Budget cuts often result in less training equipment, a reduction in training staff, less time to conduct training, and less money for developing certified and professional instructors.¹⁸⁹ Additionally, agency leaders often do not understand or support enhanced or progressive training scenarios, failing to see the need for proactive preparation, and overreact to

¹⁸⁸ Kat Kelley, "Training Injuries, Training Deaths...Every Instructor's Nightmare," *Law Enforcement Trainer* 12, no. 5 (1997), 38–40.

¹⁸⁹ Kelley, "Training Injuries, Training Deaths," 38–40.

injuries that do occur by canceling training sessions instead of investigating the cause of the accident and applying corrections to the training environment.¹⁹⁰

Deviations to training lesson plans and safety protocols have also been cited as contributors to training accidents. Deviations include inserting unplanned injects into scenarios, as well as allowing scenarios to continue past programmed “stop points,” where role player reactions cannot be predicted or controlled.¹⁹¹ Impromptu training by well-intended and motivated officers in the field can also result in tragic consequences, as these incidents often occur outside controlled training environments and without proper planning and safety protocols in place.

A more critical factor contributing to accidents in the law enforcement training environment is the lack of professionally trained and experienced instructors. Understanding how to safely control and run scenario-based training exercises takes specific expertise, experience, and resources. Well-intended trainers often lack the knowledge to set appropriate goals and objectives, and can inadvertently create inappropriate responses during simulations. Additionally, inexperienced training instructors often fail to incorporate dedicated safety officer resources to the training environment. Lack of adequate resources needed to effectively run an active or complicated scenario also leads instructors to double assignments, resulting in lack of oversight and critical gaps in safety.

3. Driving and Traffic-Related Incidents

Vehicle and traffic-related accidents make up approximately half of all line-of-duty deaths annually, with thousands more injured while behind the wheel or in traffic-related accidents.¹⁹² Officer deaths from motor vehicle accidents increased between 1980 and 2008, while deaths for other reasons in this same time period declined.¹⁹³ According to the National Highway Traffic Safety Administration (NHTSA), “from 1982–2008, a

¹⁹⁰ Ibid.

¹⁹¹ Ibid.

¹⁹² “Causes of Law Enforcement Deaths.”

¹⁹³ Stephens, Fiedler and Edwards, *OSW Group Annual Summary*, 1–37.

total of 823 law enforcement officers were killed in driving accidents involving both vehicles and motorcycles.”¹⁹⁴ In contrast to private automobile insurance company data that shows “males under the age of 25 are more likely to be involved in a vehicle accident,” data in law enforcement shows that “officers in their mid-30s with approximately 10 years of experience face a greater risk of dying in a duty-related vehicle accident.”¹⁹⁵

Speed has been identified as “one of the primary factors in police vehicle crashes, and half of all fatal crashes are single vehicle accidents.”¹⁹⁶ Evidence suggests that the greatest improvement in vehicle safety within the law enforcement profession could be achieved simply by officers increasing their use of seat belts.¹⁹⁷ Additionally, “nearly half of officers killed in traffic accidents over the past three decades were not wearing their seatbelts.”¹⁹⁸ Although officers understand the importance of wearing seat belts, many feel that the “use of a seatbelt in certain situations actually increases their risk due to the extra time it takes to exit their patrol vehicle and draw a weapon” when a threat is present.¹⁹⁹

This problem is not isolated to the policing profession, as “more than three-quarters of firefighters killed in line-of-duty vehicle accidents in the last 30 years were not wearing seat belts.”²⁰⁰ Additional contributors to injuries and fatalities include aggressive driving behaviors outside of legal limits to arrive quickly at calls, failure to use both lights and sirens during response driving, and a feeling of invincibility by officers.²⁰¹

¹⁹⁴ Feidler, “*Officer Safety and Wellness*.”

¹⁹⁵ Pinizzotto, Davis and Miller, *Accidentally Dead*, 8–13.

¹⁹⁶ Stockton, “Officer Safety and Below 100,” 50–52.

¹⁹⁷ La Tourrette, *Safety and Health Protection Efforts in the Police Service*, 74–78.

¹⁹⁸ Bryan Vila and Byron G. Gustafson, “The Ongoing Crisis: Officer-Involved Collisions—Why They Happen and What Can Be Done,” *California Peace Officer*, April 2, 2011.

¹⁹⁹ Hope M. Tiesman et al., “Eleven Years of Occupational Mortality in Law Enforcement: The Census of Fatal Occupational Injuries, 1992–2002,” *American Journal of Industrial Medicine* 53 (2010): 940–949.

²⁰⁰ Tiesman et al., “Eleven Years of Occupational Mortality in Law Enforcement, 940–949.

²⁰¹ Pinizzotto, Davis, and Miller. “Accidentally Dead,” 8–13.

The operation of police vehicles, especially in response and pursuit driving situations, has generated significant discussion and concern, due to the unintended consequences of property damage, injuries, and fatalities to both officers and citizens, resulting in more restrictive policies.²⁰² Pursuit or response driving requires a set of physical skills that must be maintained through regular training. Officers are trained in vehicle operations in the academy, but unlike firearms skills that require annual training and certification, officers are often not required to attend regular in-service programs to maintain vehicle skills.

The number of officers killed in vehicle accidents while traveling to assist in pursuits has been steadily increasing for several decades.²⁰³ Concerns have been raised that the presence of tire deflation devices in patrol cars may be resulting in secondary officers driving at unsafe speeds in order to deploy the devices ahead of the pursuit.²⁰⁴ The safety risk to officers deploying tire deflation devices is significant, as fleeing suspects often leave the roadway in an attempt to go around devices or parked vehicles. Officers have also been struck by passing motorists not involved in the pursuit while deploying or retrieving the devices. As the number and variety of tire deflation devices have increased, so have the number of officers killed attempting to deploy those devices.²⁰⁵

The value of community and officer safety over immediate suspect apprehension in pursuit and response driving has taken priority due to civil liability and negligence lawsuits initiated against jurisdictions. Safety-minded agencies are changing procedures to limit when pursuits may be initiated and how they are conducted, mandating regular vehicle operations training, and exploring alternative, safe methods to slowing pursued vehicles. Research and experimentation into electronic kill switch technology that can

²⁰² Feidler, *Officer Safety and Wellness*.

²⁰³ Richard Johnson and Harry Dolan, "The Dangers of Vehicle Pursuits: New Emerging Issues," *Police Chief* 81 (2014): 24–27.

²⁰⁴ Johnson and Dolan. "The Dangers of Vehicle Pursuits," 24–27.

²⁰⁵ *Ibid.*

remotely turn off the ignition of fleeing suspect vehicles offers future promise for safe alternatives in ending police pursuits.

Police vehicle operation is also complicated by the complexity of today's modern police vehicle, which houses computers, radios, cameras, telephone, and other technological advances that officers must manage while in motion. The effects of multi-tasking while driving and managing various information systems is not yet known, but research is currently being conducted by various organizations to better understand this relationship and the circumstances officers become involved in prior to vehicle accidents.

In addition to driving incidents, officers are killed and injured each year in pedestrian-related accidents. Although there is no national report of officers struck by a vehicle, an 11-year study on occupational mortality in law enforcement from 1992 to 2002 found that out of the 815 transportation-related officer fatalities recorded, over 20 percent died outside of their vehicle while conducting duties on foot.²⁰⁶ Common incidents include officers being struck while directing traffic, investigating accidents, setting up cones, or conducting traffic stops.

Practices and policies have been implemented in some agencies to reduce the risk of being struck, to include approaching occupants on the passenger side of vehicles during traffic stops, wearing high visibility reflective vests while on foot conducting accident investigations, and implementation of incident command protocols during major highway incidents to reduce the opportunity for compounding accidents and incidents. In 2001, recommendations for prevention of pedestrian-related injuries and fatalities while working along roadways were developed by NIOSH specifically for firefighters, which included the use of reflective clothing and vests and training on safe procedures near moving traffic.²⁰⁷ The application of these recommendations to law enforcement appears practical, but studies do not exist to determine whether they have been implemented.²⁰⁸

²⁰⁶ Tiesman et al., "Eleven Years of Occupational Mortality in Law Enforcement, 940-949.

²⁰⁷ Ibid.

²⁰⁸ Ibid.

4. Fatigue, Shift Work, and Complacency

Sleep deprivation in the law enforcement profession continues to be a major concern. Beth Pearsall states in an article for the National Institute of Justice that “sleep disorders are twice as prevalent among law enforcement officers compared to the general public, and they remain largely undiagnosed and untreated in the profession.”²⁰⁹ It is well documented in research that accident rates increase, and alertness and sound decision-making decreases, when fatigue sets in. Dr. Bryan Vila, a leading sleep research expert on the effects of officer fatigue, states:

Sleep deprivation contributes to an officer’s irritability with the public and inability to maintain calm in situations due to diminishing attentiveness; it also impairs physical and cognitive abilities. Sleep deprivation sets up a vicious cycle: fatigue decreases your ability to deal with stress and stress decreases your ability to deal with fatigue.²¹⁰

Although the U.S. federal government has developed regulations to control the work hours of certain occupational groups in the transportation industry and other high-risk occupations due to the impact of fatigue on job performance and public safety, nothing has been mandated for law enforcement.²¹¹

Research is rich on the negative effects of shift work on police officers, citing increased stress, chronic fatigue, inability to concentrate, gastrointestinal problems, weight gain, and decreased morale. Police officers typically work long shifts that become extended due to personnel shortages, operational necessity, or emergency situations. Various shift configurations have also been shown to create greater fatigue in police officers, to include long shifts, shifts that are chosen by the employer and not the officer, and continuous night shifts.²¹² As quoted in Claire Mayhew’s article “Occupational Health and Safety Risks Faced by Police Officers,” M. Patterson states that “night work

²⁰⁹ Beth Pearsall, “Sleep Disorders, Work Shifts and Wellness in Officers,” *National Institute of Justice Journal* 20 (2012): 36–39.

²¹⁰ Feidler, *Officer Safety and Wellness*.

²¹¹ Bryan Vila, Gregory B. Morrison and Dennis J. Kenney, “Improving Shift Schedule and Work-Hour Policies and Practices to Increase Police Officer Performance, Health, and Safety,” *Police Quarterly* 5 (2002): 4–24.

²¹² Vila, Morrison and. Kenney, “Improving Shift Schedule and Work-Hour Policies,” 4–24.

involves a disruption to the normal body circadian rhythm and results in decreased capabilities.”²¹³ This, in turn, can have a devastating impact on an officer’s ability to perform complicated tasks, maintain alertness and situational awareness, and conduct sound decision-making, compromising officer and community safety.

The length of work shifts has also contributed to fatigue and health problems among police officers. Most police departments have moved away from traditional eight-hour work shifts to a compressed schedule in which officers work 10- or 12-hour shifts.²¹⁴ This allows officers more days off each week but requires longer shifts each day worked, which can have a negative impact on fatigue and alertness. As quoted in Pearsall’s article “Sleep Disorders, Work Shifts and Wellness in Officers,” a study by Karen Amendola at the Police Foundation found that 10-hour shifts provided officers with numerous benefits over the traditional 8-hour work shift, including more sleep due to additional days off and a higher quality of life at work.²¹⁵ Other studies have been conducted on the benefits of various shift lengths, but most have failed to produce conclusive results.

To compound the fatigue problem, officers also often work secondary overtime assignments on days off to enhance their financial situation, which limits scheduled rest periods. Officers often lack the discipline to voluntarily reduce overtime hours, and may even become financially dependent on the overtime pay. Adding to the problem of insufficient rest periods is the scheduling of mandated court appearances on days off by some agencies, so as not to interfere with operational work shifts. Additional court dates may also result from more complex criminal cases requiring additional court appearances or from continuances requested by defendants. Agency policies are needed to set reasonable restrictions on overtime hours, when court is scheduled, and hours worked each day to minimize fatigue and stress.

²¹³ Claire Mayhew, “Occupational Health and Safety Risks Faced by Police Officers,” *Trends and Issues in Crime and Criminal Justice* no. 196 (2001), 1–6, http://www.aic.gov.au/media_library/publications/tandi_pdf/tandi196.pdf.

²¹⁴ Pearsall, *Sleep Disorders, Work Shifts and Wellness in Officers*, 36–39.

²¹⁵ *Ibid.*

Officers who have been on the job for extended periods of time often become comfortable and complacent in carrying out their day-to-day tasks. Police complacency can be defined as “the non-recognition of danger and a false sense of contentment.”²¹⁶ When officers go long periods of time without a safety-related incident or near-miss experience, they develop an attitude that nothing will happen, continuing their pattern of inappropriate behavior. As a result, officers who become complacent are more inclined to take short cuts, ignoring established safety protocols and practices. Complacency also leads to the loss of situational awareness, where officers fail to see or anticipate problems before they arise. This creates problems where officers are caught by surprise and have to react instantly without mental or physical preparation, compromising their ability to safely resolve an incident.

5. Physical and Emotional Health and Wellness

It is well documented that policing is a profession that experiences a high-level of job-related stress. Research confirms that “police officers have an elevated risk for adverse mental and physical health problems in comparison to the general population.”²¹⁷ Excessive weight, poor nutrition, stress, and depression can lead to increased injuries, heart attacks, posttraumatic stress disorder (PTSD), and suicide. Studies also indicate that cardiovascular disease is higher in police officers than in almost all other occupations, and depression rates nearly twice as high as the general population.²¹⁸

Maintaining both the physical and psychological health of officers should be an agency priority. Keeping officers physically and emotionally fit is not only important for community engagement and safety, it has proven to be “cost-effective in its ability to prevent illness and fatalities, resulting in fewer sick days, disabilities, and injuries—

²¹⁶ “Complacency: The Officer’s Number One Enemy,” Oct. 06, 2015, PoliceOne.com. <http://www.policeone.com/training/articles/44415-COMPLACENCY-THE-OFFICERS-NUMBER-1-ENEMY/>.

²¹⁷ Joseph B. Kuhns, Edward R. Maguire and Nancy R. Leach, *Health, Safety, and Wellness Program Case Studies in Law Enforcement* (Washington, DC: Office of Community Oriented Policing Services, (2015).

²¹⁸ Tara A. Hartley et al., “Health Disparities in Police Officers: Comparisons to the U.S. General Population,” *International Journal of Emergency Mental Health* 13, no. 4 (2011): 211–220.

thereby reducing health care costs for jurisdictions.”²¹⁹ As Feidler notes, “the cost of a single, on-duty heart attack has been calculated by various law enforcement agencies to be in the \$400,000 to \$750,000 range.”²²⁰

Suicide among active and retired police officers has become a growing concern in the profession. Factors contributing to the number of suicides include the high stress from the job and long working hours, exposure to traumatic events, depression, lack of support systems at home and within the department, and alcohol abuse.²²¹ The National Occupational Mortality Surveillance conducted a national study that found the rate of police officers dying from suicide is 2.4 times higher than those from homicides.²²² While studies vary considerably on this subject, statistics show that “the suicide rate for police officers remains 17/100,000, compared to the general population’s rate of 11/100,000.”²²³

Variances for officer suicide rates are attributed to how fatalities are recorded. The Census of Fatal Occupational Injuries (CFOI) is “the most comprehensive and timely source of workplace fatalities in the U.S. and is maintained by the Bureau of Labor Statistics (BLS).”²²⁴ The CFOI “generally only includes suicides that occur at the work site.”²²⁵ Data demonstrates, however, that only 10 percent of law enforcement suicides occur in the actual workplace, and thus does not represent a complete picture of suicide rates among active and retired officers.²²⁶

²¹⁹ Feidler, *Officer Safety and Wellness*.

²²⁰ Ibid.

²²¹ Tara A. Hartley, Cecil M. Burchfiel, Desta Fekedulegn, Michael E. Andrew, and John M. Violanti, “Health Disparities in Police Officers: Comparisons to the U.S. General Population,” *International Journal of Emergency Mental Health* 13 (2011): 211–220.

²²² President’s Task Force on 21st Century Policing, *Final Report of the President’s Task Force*.

²²³ Feidler, *Officer Safety and Wellness*.

²²⁴ Tiesman et al., “Eleven Years of Occupational Mortality in Law Enforcement, 940–949.

²²⁵ Ibid.

²²⁶ Ibid.

Police officers are also at high risk for PTSD, which can be triggered by exposure to extreme stress or traumatic events such as crime scenes, significant tragedies, near-miss fatal incidents, or police shootings. The symptoms often associated with PTSD overlap with other anxiety-related disorders, and can lead to an improper diagnosis, especially if officers do not discuss traumatic events that they may have experienced. These symptoms may include nightmares, panic attacks, distressing and reoccurring images from a traumatic event, avoidance of all reminders of that event, and irritability. Acute stress from PTSD requires medical and psychiatric assessments, followed by prescribed therapy treatment.²²⁷

Although society has become more accepting of mental health problems in recent years, seeking mental health care for issues associated with PTSD or other psychological problems still carries a significant stigma in the law enforcement profession. Fear of being stigmatized as mentally ill is a significant barrier to officers seeking help. Police officers fear this label will impede their career, resulting in fewer opportunities for promotion or a determination they are unfit for duty. Officers also fear that seeking mental health treatment would be perceived as a weakness, create distance between themselves and their peers, and ultimately lead to a lack of trust that would compromise safety.

Police agencies implementing formal psychological programs that involve support and treatment for PTSD-related issues will be better prepared to recognize and treat these troubled behaviors. Leaders who put mechanisms in place to intervene and provide support and resources to officers who exhibit signs of PTSD also establish a positive culture for others in the agency to seek help when needed.

C. DATA COLLECTION AND PERFORMANCE METRICS

Understanding where to direct safety prevention and mitigation efforts cannot be effectively realized without first determining benchmarks for data and performance outcomes. Two problems currently exist in the law enforcement profession regarding this

²²⁷ Rachel Yehuda, “Post-Traumatic Stress Disorder,” *New England Journal of Medicine* 346 (2002): 74–76.

issue: the lack of accurate and detailed injury and accident data, and the lack of performance measures to gauge the effectiveness of safety programs currently in place.

1. Injury, Accident, and Fatality Data

A significant gap exists in the collection of law enforcement line-of-duty injury data. Data collection in the area of health and safety is focused primarily on line-of-duty fatalities and assaults on police officers. The FBI's Law Enforcement Officers Killed and Assaulted (LEOKA) program, prepared by the FBI Uniform Crime Reporting System, is considered the most comprehensive source available. This statistical analysis, however, focuses solely on officers feloniously or accidentally killed, and officers assaulted, providing limited insight on the types of risk that officers face.²²⁸ Although LEOKA reports provide significant information concerning the details surrounding each fatality, little information is available for accidental deaths.²²⁹

The NLEOMF's database of officer fatalities, broken down by primary reason, is the only other source of accurate data on LODDs. It is also "the only source that reports line-of-duty illness fatalities for law enforcement personnel."²³⁰

A report by the IACP on *Reducing Officer Injuries* provided a more detailed and complete injury picture in eighteen law enforcement agencies selected for the yearlong study. The results indicated that the majority of the injuries documented in the study were those that would not be captured by current collection mechanisms such as LEOKA or the Uniform Crime Report data.²³¹ The study demonstrates the scope of the problem and reinforces the critical need to develop better injury reporting databases across the profession.

In sharp contrast to the limited injury and fatality databases for law enforcement, the fire service utilizes numerous data sources from professional organizations to track

²²⁸ IACP, *Reducing Officer Injuries*.

²²⁹ Ari N. Houser et al., *Emergency Responder Injuries and Fatalities: An Analysis of Surveillance Data* Santa Monica, CA: RAND, 2004.

²³⁰ Houser et al., *Emergency Responder Injuries and Fatalities*.

²³¹ IACP, *Reducing Officer Injuries: Final Report*.

firefighter line-of-duty injuries and fatalities, providing a much more detailed and useful picture of the type, extent, and cause of injuries in the profession. The International Association of Fire Fighters (IAFF) Death and Injury Survey is an annual report that collects information on “line-of-duty deaths and injuries, incidence and type of infectious disease exposure, and occupational injury and illness retirements.”²³²

The National Fire Protection Agency (NFPA) produces an annual report “estimating the number of firefighter injuries based on a survey of city and county fire departments.”²³³ Injury data in this report is “broken down by type of duty and nature of injury.”²³⁴ A separate annual report on firefighter fatalities is also produced by the NFPA, which breaks down LODDs by “nature of injury, cause of injury, type of duty, and other factors.”²³⁵ The United States Fire Administration (USFA) captures firefighter LODDs in a separate annual report, breaking down each incident in detail, and providing “narrative information describing the circumstances of every fatality.”²³⁶

The National Fire Incident Reporting System (NFIRS), maintained by the USFA, is an “incident-based database that contains information on firefighter casualties, as well as detailed information on firefighter injuries.”²³⁷ The database relies on voluntary reporting but contains information on fire incidents in 44 states.²³⁸ The NFIRS is a “sortable database, allowing records to be searched to study specific combinations and relationships between the nature and circumstances of injuries.”²³⁹

Lastly, the National Institute of Occupational Safety and Health (NIOSH) produces firefighter fatality investigative reports as part of the Fatality Assessment and Control Evaluation (FACE) Program.²⁴⁰ These reports, which investigate a particular

²³² Houser et al., *Emergency Responder Injuries and Fatalities*.

²³³ Ibid.

²³⁴ Ibid.

²³⁵ Ibid.

²³⁶ Ibid.

²³⁷ Ibid.

²³⁸ Ibid.

²³⁹ Ibid.

²⁴⁰ Ibid.

subgroup of fatalities, are considered highly useful to identify technology-based solutions in the use of personal protective equipment that could lead to reductions in the number of injuries and fatalities.²⁴¹

In order to understand the extent and type of risk confronting the law enforcement profession, the number and type of injuries must be documented and analyzed. Understanding both injuries and fatalities, whether due to accident or intentional act, will provide the overview necessary to gain a thorough understanding of risk and allow agencies to prioritize policies and programs to address them. Without an understanding of the extent and nature of officer injuries, safety efforts will continue to be misdirected, leaving gaps in programs and prevention, and the true economic and operational impact to agencies will not be realized. This issue was important enough to be highlighted in the President’s Task Force on 21st Century Policing, which cited the need for a “repository on data of law enforcement injuries, deaths, and near misses.”²⁴²

The collection of data on officer injuries is important for several reasons. First, injuries present a significant cost to agencies due to the overtime required to staff vacant positions, increased insurance premiums, and workers’ compensation claims. Second, to effectively develop policies, programs and training to minimize risk and reduce injuries, it is critical to have a complete picture of injuries within the profession. The ability to obtain comprehensive data on injuries and fatalities would also provide opportunities to medical providers and other professionals to analyze incidents and accidents to improve training, tactics, equipment and medical care that may prevent injuries and save lives.²⁴³ Lastly, because accurate data on police officer injuries and accidents is not known, the true impact on agencies cannot be determined.

Strong barriers to injury and accident data collection exist in law enforcement, and arise from the failure and willingness of many agencies to share information due to fear of legal or professional reprisal and embarrassment. There is significant concern

²⁴¹ Houser et al., *Emergency Responder Injuries and Fatalities*.

²⁴² President’s Task Force on 21st Century Policing, *Final Report of the President’s Task Force*.

²⁴³ Ibid.

among law enforcement leadership regarding how mistakes or failures will be communicated and shared publicly, and the impact of potential retribution.²⁴⁴ These fears are enhanced due to the media's focus on highlighting problems and assigning blame. As Kenneth Husted and Snejina Michailova observed, "individuals do not freely and openly share knowledge about the mistakes they have made."²⁴⁵

In examining why law enforcement organizations do not learn from past failures, Philippe Baumard and William Starbuck explained that leaders often do not take responsibility for failures due to concerns regarding retribution, and reports that are produced may omit pertinent information to shield individuals from potential negative impact. There is often a fear that leaders might blame those who are involved in failed response operations and react to these failures by punishing them.²⁴⁶ These fears and perceptions permeate the public safety culture and interfere with accurate and effective reporting processes. The absence of this data and lessons learned result in the repetition of similar accidents, injuries, and fatalities across the profession.

The medical field has attempted to overcome this obstacle through the establishment of a peer review process to "review and monitor the performance of physicians to ensure high quality care to patients."²⁴⁷ The President's Task Force on 21st Century Policing cited the value of this process and the Healthcare Quality and Improvement Act of 1986 to the medical field, and called for a similar process to be implemented for the law enforcement profession.

The professional peer review system is a practice that began centuries ago, but has more recently evolved into a formal process that provides a professional peer review management system to openly discuss accidents, mistakes, and near misses without fear

²⁴⁴ Ibid.

²⁴⁵ Kenneth Husted and Snejina Michailova, "Diagnosing and Fighting Knowledge Sharing Hostility," *Organizational Dynamics* 31 (2002): 60–73.

²⁴⁶ Philippe Baumard and William H. Starbuck. "Learning from Failures: Why It May Not Happen." *Long Range Planning* 38 (2005): 281–298.

²⁴⁷ Christopher S. Morter, "The Health Care Quality Improvement Act of 1986: Will Physicians Find Peer Review More Inviting?" *Virginia Law Review* 74 (1988): 1115–1140.

of reprisal or legal repercussions.²⁴⁸ The Healthcare Quality and Improvement Act of 1986 was established by Congress to encourage good faith peer review. The primary function of the legislation was to “provide the hospital, the peer review board and the accusing physician immunity from a libel suit brought by the accused physician.”²⁴⁹

Critics of the peer review process, however, argue that granting doctors with the ability to police members of their own profession may not be in the best interest of the public.²⁵⁰ The high profile attention on today’s police departments regarding policies and practices, accusations of bias and discrimination, and heightened concerns over a lack of transparency and fairness in the investigation of police-related shootings make the adoption of a similar professional peer review process unlikely for the law enforcement profession. The implementation of such a process in today’s climate would likely be interrupted as an additional attempt by the law enforcement profession to isolate and police themselves, and avoid liability, issues that have been at the forefront of police-community tensions across the nation over the past 18 months.

The purpose of requiring data collection and performance measurement is to assess the changes of safety within an agency after the implementation of programs aimed at reducing injuries and fatalities. Of the safety programs that exist in law enforcement, few have been successful in showing the effectiveness of these programs in reducing injuries or fatalities, as most programs implemented were established without performance metrics in mind.

Data on police officer injuries and fatalities is available to most law enforcement agencies through their risk management division or workers’ compensation claims office. These offices can provide an analysis of injuries and claims in relationship to programs implemented, to assist in determining if specific safety objectives were achieved. The

²⁴⁸ Ibid.

²⁴⁹ Yann H. H. Van Geertruyden, “The Fox Guarding the Henhouse: How the Health Care Quality Improvement Act of 1986 and State Peer Review Protection Statutes have Helped Protect Bad Faith Peer Review in the Medical Community,” *Journal of Contemporary Health Law and Policy* 18, (2001): 239–271.

²⁵⁰ Van Geertruyden, “The Fox Guarding the Henhouse, 239–271.

accuracy of this data, however, is dependent on the honest reporting of injuries and accidents within each agency.

Injury data is often inaccurate due to the desire of many officers to hide injuries and avoid being temporarily removed from regular assignments and placed in administrative roles. Reassignment, even for short periods of time, can negatively impact officers financially, who often collect shift differential or work overtime assignments to supplement their base income. Although limited in scope and detail, internal agency reporting authorities serve as an available resource for many agencies seeking to assess safety and more effectively direct resources toward prevention and mitigation.

2. Measuring Performance

To measure the effectiveness of safety programs within law enforcement, it is important to develop benchmarks and performance objectives that measure results. Poorly developed objectives that provide no method to assess improvement or effectiveness can lead to programs being discontinued or unfunded. Additionally, without an effective evaluation in place, the focus of resources toward safety-related initiatives might be misdirected, failing to identify and address critical priorities.

A recently published report by the Office of Community Oriented Policing (COPS) noted that the majority of law enforcement health, safety, and wellness programs in existence “have *not* been scientifically evaluated, the majority relying on research designs that make it difficult to draw firm conclusions about program effects.”²⁵¹ As such, it is difficult to know if safety and wellness programs initiated are effective, and if so, to what extent.²⁵² Although the COPS document highlights four law enforcement agencies for their model programs in officer safety, health or wellness, it points out the lack of empirical data to support whether such programs can be proven as effective, supporting the need for evaluation and metrics to be built into program design.²⁵³

²⁵¹ Joseph B. Kuhns, Edward R. Maguire and Nancy R. Leach, *Health, Safety, and Wellness Program Case Studies in Law Enforcement* (Washington, DC: Office of Community Oriented Policing Services, 2015).

²⁵² Kuhns, Maguire and. Leach, *Health, Safety, and Wellness Program*.

²⁵³ Ibid.

In addition to determining its effectiveness in preventing injuries and fatalities, an evaluation of safety programs should include an analysis of the economic costs and benefits to the organization. This is often difficult to measure, as safety programs can be costly and resource intensive, and the economic impact not realized until a long-term analysis can be undertaken. The financial impact of officers suffering injuries in the line of duty, however, extends far beyond the actual injury and can increase organizational costs for worker compensation, increased insurance premiums, medical care, staffing shortages and hiring of new employees, training, and OSHA fines.²⁵⁴ Workplace injuries can also lead to other significant health concerns such as depression and absenteeism, which impact organizational productivity and safety.

The law enforcement profession is not alone in its inability to measure the cost of safety effectively. Even in private industry, the economic impact and costs of safety intervention programs are rarely captured and reported.²⁵⁵ Private industry often attempts to measure safety program effectiveness by determining the return on investment (ROI), although workplace safety initiatives cannot be measured in law enforcement organizations by this traditional for-profit business model.²⁵⁶

To properly assess organizational safety performance and programs in private industry and to set future goals, senior management gains access to information through both leading and lagging metrics. Lagging indicators are reactive and include injury and fatality reports, incident investigative reports, and near-miss reports that “assess the effectiveness of personal safety practices, and identify the tangible consequences of past safety performance.”²⁵⁷ Essentially, lagging indicators examine events that have already happened.

Alternatively, the study of leading indicators provides a proactive analysis of safety practices that are meant to identify problems before accidents or incidents happen.

²⁵⁴ Donald A. Hantula et al., “The Value of Workplace Safety: A Time-Based Utility Analysis Model,” *Journal of Organizational Behavior Management* 21 (2001): 79–98.

²⁵⁵ Ibid.

²⁵⁶ Donald Gonzales, “Integrated Approach to Safety: Fewer Lost-Time Incidents and Greater Productivity,” *Professional Safety* (2010): 50–52.

²⁵⁷ Mannan, Mentzer and Zhang, *Framework for Creating a Best-in-Class Safety Culture*, 1423–1432.

Examples of leading indicators are safety audit results, inspection reports, and risk assessments. Leading indicators are considered far more effective in predicting the smaller events that precede major accidents providing opportunities for intervention and prevention.²⁵⁸ Graham discusses a similar process of assessing organizational performance through the actuarial component of risk management, which studies the past, and the probabilistic component, which involves a proactive effort to identify problems and implement preventative measures before accidents occur.²⁵⁹

A program developed by the Yolo County Sheriff's Office in California provides an example of a successful effort to measure the outcome of a specific safety program, with the objective to improve traffic safety and reduce high-speed accidents in their agency. The process began with an evaluation of existing data that showed "there had been 616 instances of deputies exceeding 90 mph in the most recent 12-month period."²⁶⁰ Additional findings indicated that on average, over the past 10 years, 1.5 deputies had been injured per year, resulting in financial costs to the agency of more than \$1 million in claims, damages, and legal fees.²⁶¹

To address the issue of excessive speed, Yolo County put a speed-monitoring program in place aimed at reducing the driving speed of its deputies. In addition to training, the department mandated that deputies voice their justification for exceeding 90 MPH into the in-car mobile camera. These incidents were then reviewed each month by first line supervisors to address any concerns or violations of policy.²⁶² As a result of the program, unjustified speed activations "were reduced by 91 percent in the first year, and 94 percent in the second year, compared to pre-training activation levels."²⁶³ Additional results demonstrated a significant reduction in vehicle accidents over a two-year time period, and zero on-duty, at-fault accidents by department personnel since the program

²⁵⁸ Ibid.

²⁵⁹ Graham, "Domestic Security 2015."

²⁶⁰ "Destination Zero," National Law Enforcement Officers Memorial Fund, accessed August 18, 2015, <http://www.nleomf.org/programs/destination-zero/>.

²⁶¹ "Destination Zero."

²⁶² Ibid.

²⁶³ Ibid.

began.²⁶⁴ This not only increased the safety of officers behind the wheel, but also significantly decreased civil and criminal liability and the costs associated with officer injuries and repairing vehicle equipment.

D. SUMMARY

This chapter outlined the areas of risk in law enforcement for which both officers and agencies have significant control over through proper safety management. Although other threats and risks, such as attacks and ambushes, exist within the profession, the vast number of injuries and accidents occurring in law enforcement agencies are controllable and can be mitigated, if not prevented.

The critical role of culture and leadership in the ability of an organization to achieve a positive safety culture was clearly demonstrated. The specific cultural challenges unique to law enforcement were identified, with similar comparisons to our public safety counterparts in the fire service. Understanding and recognizing these challenges is the first step toward developing strategies for change.

Lastly, significant gaps were identified in the collection of injury and accident data throughout the profession. Also noted was the lack of performance metrics in place to address the existing safety-related programs currently in existence. Without such data, programs aimed at prevention and mitigation will likely lose support or exist without a comprehensive understanding of the program's impact.

In the next chapter, solutions for better managing safety in law enforcement will be explored through the examination of existing programs and initiatives in the profession, as well as safety programs found in other high-risk organizations.

²⁶⁴ Ibid.

V. SEARCHING FOR SOLUTIONS

A. SAFETY MANAGEMENT SYSTEMS

A safety management system (SMS) can be described as “a systematic framework where policy, objectives, strategy, organization, planning, resourcing, risk assessment, implementation, monitoring and measuring performance, and auditing can be tackled coherently.”²⁶⁵ As quoted in the *Journal of Loss Prevention in the Process Industries*, K.T. Ming defines a safety management system (SMS) as the “policies, objectives, organization, management controls and resources that are in place to manage safety, health and environment in all parts of the organization.”²⁶⁶ B. Kandola adds that a safety management system “must enable the assessment of risks to be carried out and as a result devise and implement adequate risk reduction measures and provide appropriate feedback mechanisms for further improvement.”²⁶⁷

The application of systems thinking to safety management models is critical to ensure the coordination of efforts across the entire organization. Without developing a systematic approach to manage all aspects of safety, programs, and initiatives created often lack the proper risk analysis, performance measures, feedback, and coordination to address the gaps and problems the programs are targeting. Graham strongly supports the development of risk management systems to address areas of safety and liability throughout law enforcement agencies. A systems approach to safety allows organizations to recognize, prioritize, and address issues of importance, and eliminate the number of gaps between various entities within agencies.

A primary purpose of safety management systems is to prevent the erosion of safety practices, and recognize near-miss incidents at an early stage to prevent accidents and injuries from occurring. While research identified no single model across industries, those that do exist contain common components or organizational functions that comprise

²⁶⁵ Cooper, *Safety Management in the Emergency Response Services*, 39–49.

²⁶⁶ Jaime Santos-Reyes and Alan N. Beard, “Assessing Safety Management Systems,” *Journal of Loss Prevention in the Process Industries* 15 (2002): 77–95.

²⁶⁷ Santos-Reyes and Beard, “Assessing Safety Management Systems,” 77–95.

recognized, effective safety management systems. Safety programs make up the core of any safety management system, with their primary purpose to reduce exposure to a variety of hazards in the workplace.

In order to evaluate current law enforcement safety programs against safety management approaches in other high-risk organizations, research was conducted into the safety programs and practices utilized in the law enforcement profession. Safety management practices in the fire service, military, and private sector were then examined for best practices that could be effectively applied to a law-enforcement safety management model.

1. Law Enforcement Programs

Although no comprehensive safety model or safety management system was located in the law enforcement profession, this research located numerous projects, programs and initiatives that demonstrate a dedicated effort at improving safety in targeted risk areas. These programs have value in the development and adoption of a comprehensive law-enforcement safety model, providing building blocks for safety management programs within the larger framework of a comprehensive safety management system.

a. Project Destination Zero

The National Law Enforcement Officer's Memorial Fund (NLEOMF) has recently undertaken a nationwide study of law enforcement safety programs through a grant awarded by the Bureau of Justice Assistance entitled Destination Zero. The program "recognizes officer safety and officer wellness programs that proactively engage employees in initiatives that increase overall officer wellness and/or reduce line-of-duty injuries or deaths."²⁶⁸ This project began in December of 2014 and identified 97 departmental programs, professional resources, and third-party initiatives related to improving safety in the workplace.²⁶⁹ The project solicited submissions regarding

²⁶⁸ "Destination Zero."

²⁶⁹ NLEOMF, *Destination Zero Project*.

department safety programs through NLEOMF website submissions, Destination Zero advertisements, various professional publications, Internet research, and word of mouth.

Safety programs were identified in three key areas: general officer safety (21 submissions), traffic officer safety (24 submissions), and wellness (52 submissions).²⁷⁰ Submissions were evaluated to determine the most comprehensive and strategically implemented program. Programs selected for consideration were then evaluated based on innovation, implementation, participation rate, history of the program, and success.²⁷¹

Throughout the project, challenges existed regarding the collection of information about the various programs. In many cases, programs were submitted online, and NLEOMF staff experienced difficulties in getting agencies to follow-up and provide a more detailed brief of their programs.²⁷²

While reinforcing the growing number of health and safety-related programs in law enforcement, the study revealed few programs that took a comprehensive approach to safety across agencies. The focus for most agency programs centered around one of the targeted risk areas of officer health and wellness, such as fitness or response driving, leaving gaps and little oversight over other areas of concern.

One program identified by the Destination Zero study as comprehensive in nature, is the Orange County Sheriff's Office (Florida) Safety, Fitness and Wellbeing Program. This program can be considered comprehensive only in the risk area it was designed to target, as it does not address safety in other critical high-risk areas across the agency. What the program does provide are creative programs aimed at increasing the physical and emotional health of department members through education and participation in nutrition, physical fitness, stress reduction, and financial health classes.²⁷³ The Orange

²⁷⁰ Ibid.

²⁷¹ Ibid.

²⁷² Email conversation with Nick Breul, director of Officer Safety & Wellness at the NLEOMF, Project Destination Zero, August 18, 2015.

²⁷³ "Destination Zero."

²⁷³ Ibid.

County Sheriff's Office has proven to be progressive in dedicating a permanent wellness coordinator to oversee their "Fit Deputy" Wellness Program.²⁷⁴

The Fairfax County Police Department's (VA) Safety Officer Program, formally established in 2008 with the appointment of a full-time safety officer position, is one of the more comprehensive police safety programs located during this research that supports a holistic approach to safety across the organization. It not only works to identify current and future hazards that officers may face in various areas throughout the department, it also utilizes dedicated safety officer resources to oversee and coordinate safety-related issues across the entire agency, including the deployment of safety officers to scenario-based training exercises, high-risk operations, medical monitoring during PPE deployment, and training on the safe towing of vehicles.²⁷⁵

As in the fire service's Safety Officer Program, Fairfax County was the only agency found utilizing Incident Safety Officers (ISO), as designated under the Incident Command System (ICS), during response to high-risk operations. In this capacity, safety officers are assigned to work closely with incident commanders on operational incidents to conduct site assessments and identify any potential hazards, making recommendations as needed.²⁷⁶

The Fairfax safety officer program, which was highlighted as one of four model programs in the COPS document on Health, Safety and Wellness Case Studies in Law Enforcement, also utilizes individual program coordinators to oversee specific aspects of their safety and wellness programs, such as a full-time certified athletic trainer assigned to the academy.²⁷⁷ The program handles response to bloodborne pathogen exposures, coordinating follow up with medical practitioners, and manages the respiratory protection program through a coordinated partnership with the County's Occupational Health Center.

²⁷⁴ Ibid.

²⁷⁵ Personal knowledge due to prior employment with the Fairfax County Police Department and responsibility for the development of the safety officer program.

²⁷⁶ Ibid.

²⁷⁷ Kuhns, Maguire and. Leach, *Health, Safety, and Wellness Program*.

Despite the wide range of safety programs identified nationally through Destination Zero, the study cannot be considered comprehensive in scope due to the small number of programs collected. This resulted from its reliance on the identification and collection of law enforcement safety programs through voluntary disclosure and participation. As such, the actual extent and type of safety programs in law enforcement cannot be determined. Project Destination Zero, however, still provides the best-documented overview of law enforcement safety programs currently in existence.

b. Below 100

Below 100 is a national law enforcement safety program and non-profit organization that began in 2010 by a trainer with the International Law Enforcement Educators and Trainers Association (ILEETA) to reduce the number of line of duty deaths, especially those that were preventable. The mission and purpose of the program is to increase safety across the profession by having every level of the organization take responsibility for their actions regarding safety, and to reduce LODDs to less than 100 a year, a statistic not realized since 1943.²⁷⁸ The program was developed after law enforcement trainers reviewed thousands of LODD summaries and noticed trends in fatalities that were both predictable and preventable.²⁷⁹

Areas that were targeted in the initial training course were those identified as within an officer's control, and areas that data had shown were responsible for a high number of LODDs. These topics included seat belt usage, the wearing of body armor, response driving, and officer awareness and complacency. Content for the training continues to be modified to address other high-risk hazards that have negatively impacted the profession such as heart attacks, leading to the inclusion of training on officer health and fitness. This program is considered highly effective in targeting specific risk areas and has been recommended and endorsed by Graham, the aforementioned recognized expert in the police risk management field of study, Nationwide Insurance, and numerous state chiefs' associations.

²⁷⁸ Stockton, *Officer Safety and Below 100*, 50–52.

²⁷⁹ *Ibid.*

Many agencies have sent officers to participate in this training and have also adopted the Below 100 Safety Tenets to reinforce safety at all levels in the organization. Although this program has achieved wide endorsement across the profession, its value is limited to the specific areas of risk it targets and relies on the voluntary participation of agencies and officers.

c. Training Safety Officer Program

The Training Safety Officer (TSO) Program was developed by the League of Minnesota Cities Insurance Trust (LMCIT), in partnership with police and fire agencies across the state, to reduce training injuries while maintaining realistic, quality training for its public safety professionals.²⁸⁰ The program utilizes dedicated safety officers for active training exercises, who provide “oversight, control and guidance,” while working closely with lead instructors, to ensure that the training is conducted professionally and with minimal risk to participants.²⁸¹ The TSO Program is similar to that used by segments of the military, and involves assigning a trained and experienced instructor whose main responsibility is to provide a big-picture view of the scenario and to stop actions that are dangerous or unsafe.²⁸²

In developing the TSO program, training staff members in Minnesota examined training injuries and cited a need to focus on “off-script behavior” during role-play scenarios.²⁸³ This was defined as any behavior not planned or listed in the lesson plan. To prevent these types of reactions in the training environment, instructors met in advance to try and determine what off-script reactions they might see in various scenarios. This proactive approach to scenario-based training equipped instructors with advance warning of what to look for, allowing them to stop the exercise before accidents or injuries occurred.

²⁸⁰ “Training Safety Officer (TSO) Program,” League of Minnesota Cities, accessed Aug. 21, 2015, <http://www.lmc.org/page/1/TSOProgram.jsp>.

²⁸¹ “Training Safety Officer (TSO) Program.”

²⁸² Boe and Means, *Risk Management and Training Safety Officers*, 10–12.

²⁸³ *Ibid.*

The TSO Program brought several valuable contributions to the scenario-based training environment, including the concept of a site assessment, to determine if the location of the scenario is safe for conducting the exercise; a safety plan that provides clear instructions on authority, instructor responsibilities, and emergency stop procedures when unsafe or dangerous acts occur; a mandatory safety briefing that is held prior to the start of any scenario for all instructors and participants; site inspections, to determine if proper controls are in place to secure “classroom” perimeters from outside interference and clear of unnecessary hazards; and a safety debriefing or critique, where instructors and participants discuss the results of the training session, lessons learned, and how future training can be improved through enhanced safety measures.²⁸⁴

The TSO Program stresses the need to properly identify the TSO by the wearing of a reflective vest labeled for the safety officer’s role in the training scenario. This not only makes the TSO highly visible, but also reminds participants that they are being watched throughout the exercise.²⁸⁵ This is a similar protocol used by incident safety officers under ICS, who wear identifiable vests to designate their position and authority.

TSOs function as the eyes and ears for the training, providing valuable feedback that instructors are often not in a position to witness, or simply cannot focus on due to other responsibilities. TSOs may witness role players acting off-script, officers getting frustrated and becoming overly aggressive with each other or with role players, participants leaving the controlled training environment and not checking back in with a safety officer, and the utilization of unsafe equipment for the scenario. As such, frequent and open communication between a TSO and the lead instructor is critical to identifying hazards during the execution of a scenario-based training session and ensuring a safe outcome. This ongoing communication process between the TSO and the lead instructor is commonly referred to as “looping” and is what makes the program effective.²⁸⁶

²⁸⁴ “Training Safety Officer (TSO) Program.”

²⁸⁵ Boe and Means, *Risk Management and Training Safety Officers*, 10–12.

²⁸⁶ *Ibid.*

Although law enforcement has utilized safety officers in training for years, many have used them in name only, giving them little authority to safely conduct the exercise, and failing to involve them in the development of lesson plans or site assessments. The LMCIT's TSO Program professionalized the process and changed the significance and involvement of safety officers in training, integrating them into the planning process and giving them more control over the execution of the training scenarios.²⁸⁷ The TSO Program has allowed law enforcement, fire, and EMS agencies to conduct effective, realistic training while using appropriate safety controls to minimize risk to participants and prevent accidents from occurring.

d. Traffic and Vehicle Operation Programs

A wide variety of different programs and approaches to increasing vehicle safety exist across the policing profession. Safety programs for traffic and vehicle operations have focused on targeted risk areas such as failure to wear seat belts, excessive speed, reckless driving behaviors, and failure to wear high-visibility vests while on foot investigating roadside accidents. Safety issues are addressed largely through in-service training programs, implementation of policies and regulations governing vehicle operations, educational campaigns aimed at changing driving behaviors and eliminating cultural barriers, and technological advances to monitor driving.

Vehicle safety technologies, such as airbags and seatbelts, have reduced the number of vehicle fatalities. Research is also being conducted into the design and placement of equipment inside police vehicles to increase visibility and safety.

e. Health and Wellness Programs

The law enforcement profession has developed a wide range of health and wellness programs aimed at increasing officer safety from a physical and emotional standpoint, both on and off duty. Programs include on-duty physical fitness sessions, nutrition counseling, annual medical physicals and health screenings, suicide prevention and awareness, PTSD awareness, drug and alcohol counseling, and peer support

²⁸⁷ Griffith, "Training Accidents," 47–51.

programs. Often these programs are voluntary as opposed to mandated, but each is intended to change individual health and wellness behaviors.

In addition to service-based programs, agencies have launched educational initiatives and campaigns intended to bring awareness to health and wellness safety and highlight issues of concern with officers. Posters, newsletters, videos, websites, slogans, and logos have been developed by agencies to educate and emphasize the importance of engaging in positive health and wellness behaviors. Incentives have also been created by some agencies through the creation of competitions and personal awards to increase interest and participation in health and wellness programs. These incentives have included days off, monetary stipends, and awards.

More progressive agencies have incorporated psychologists on staff who are trained in the mental health issues unique to the law enforcement profession. These mental health professionals fill a critical role in the agency and develop trusting relationships with officers over time, allowing for a more open and effective intervention when traumatic or stressful incidents occur. When officers have established relationships with mental health service providers, day-to-day access within their agencies, and the assurance of confidentiality, they are more likely to seek assistance.

2. Fire Service Programs

What sets the fire service apart from the law enforcement profession is the incorporation of safety-related programs, practices, and regulations that govern the entire profession. Safety programs have been developed to provide a comprehensive approach to firefighter safety through education and training, implementation of standards, and dedication of resources.

a. National Fire Academy Safety Curriculum

The firefighting profession has embraced safety as a core mission of its duties, dedicating safety resources to all aspects of operations and training. The Fire Service formally began to embrace safety in 1970 with the establishment of the National Fire

Academy and a training curriculum that included firefighter safety.²⁸⁸ The Academy teaches the concepts of priorities of fire and emergency decision-making, which emphasizes the fire or emergency is secondary to the safety of life at the scene of an incident.²⁸⁹ This emphasis on life safety is intended to reinforce sound decision-making during high-risk operations and prevent unnecessary loss of life.

b. National Fire Protection Agency (NFPA) 1500

In the years that followed the opening of the National Fire Academy, formal mandates to regulate safety began to emerge in the profession. In 1985, a select group of fire chiefs developed the Fire Department Occupational Safety and Health Program, a program designed to reduce firefighter line of duty fatalities and injuries. This document was later adopted by the National Fire Protection Association's (NFPA) and published in 1987 as NFPA 1500. The National Fire Protection Association (NFPA) describes itself as "a global nonprofit organization established in 1896 devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards."²⁹⁰ NFPA 1500 established a requirement for fire departments to have an occupational health and safety program in place.²⁹¹ It was the "first consensus standard to address occupational safety and health for organizations delivering emergency services," and identified specific goals and objectives to "reduce the occupational accidents, injuries, and fatalities facing firefighters."²⁹²

c. Firefighter Fatality Investigation and Prevention Program

The National Institute for Occupational Safety and Health (NIOSH) established federal legislation in 1998 to address firefighter line-of-duty deaths and injuries. The Firefighter Fatality Investigation and Prevention Program federally mandated investigations of firefighter deaths to determine the cause and assist in the prevention of

²⁸⁸ Dunn, "Safety in the Fire Service," 26–32.

²⁸⁹ Ibid.

²⁹⁰ "NFPA Overview."

²⁹¹ Koczan, *An Assessment of Workplace Health and Safety Programs*.

²⁹² U.S. Fire Administration, *National Safety Culture Change Initiative*, 1–27.

future incidents. These investigations are analyzed by engineers and fire chiefs and result in safety recommendations that are shared with over 25,000 career and volunteer fire departments across the country.²⁹³

d. Incident Safety and Health Safety Officer

More recently, the fire service has standardized their approach to safety through the development of the Incident Safety Officer (ISO) and the Health Safety Officer (HSO). NFPA 1521 “identifies the minimum job performance requirements (JPRs) necessary to perform the duties as a fire department health and safety officer and a fire department incident safety officer.”²⁹⁴ The incident safety officer position was created to ensure the safety, well-being, and accountability of all personnel, by monitoring operations and procedures, and identifying potentially hazardous situations. The role includes recognizing hazards, ensuring proper rest and rehabilitation of personnel, and developing site safety plans for extended operations. As James Smith points out, “monitoring of an incident by the ISO maintains a systematic safety analysis of the scene.”²⁹⁵

ISOs are specially trained officers, as designated under the incident command system, who report directly to the incident commander. They have the authority to immediately stop operations and correct unsafe acts. ISOs are not considered experts in all areas of fire response and as a result, require assistance on more technical, complex incidents. In these instances, assistant safety officers who are trained in the specialized skill needed to resolve the incident are designated.²⁹⁶ Figure 5 illustrates the safety officer position within the formal incident command structure.

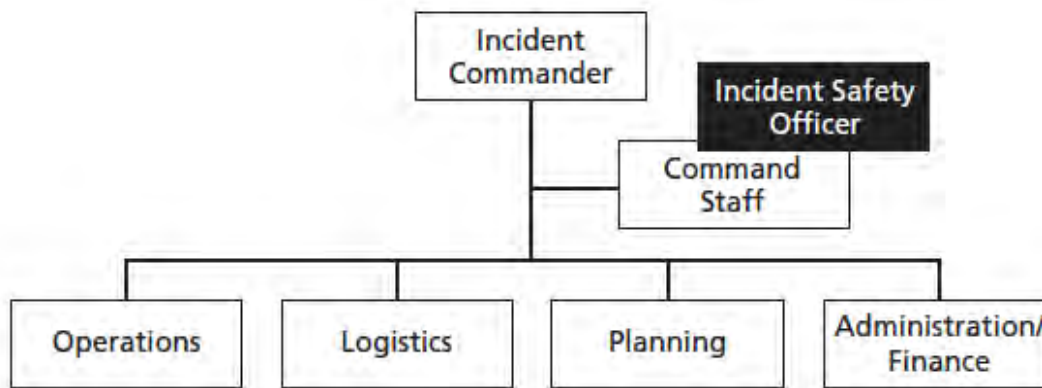
²⁹³ Dunn, “Safety in the Fire Service,” 26–32.

²⁹⁴ “NFPA 1521: Standard for Fire Department Safety Officer Professional Qualifications,” National Fire Protection Association, accessed Oct., 6, 2015, <http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1521>.

²⁹⁵ James P. Smith, “Incident Safety Officer: Roles and Responsibilities,” *Firehouse* (2014): 30–33.

²⁹⁶ Smith, “Incident Safety Officer,” 30–33.

Figure 5. Safety Responsibility in the Incident Command System



Source: Brian A. Jackson, John C. Baker, M. Susan Ridgely, James T. Bartis, and Herbert I. Linn, *Protecting Emergency Responder: Safety Management in Disaster and Terrorism Response* (Santa Monica, CA: RAND, 2004), 20.

Health Safety Officers differ from ISOs in that they are trained to manage all health and safety programs throughout the entire department. HSOs oversee and coordinate safety in areas such as vehicle operations, training, respiratory protection, and equipment. HSOs are dedicated resources whose primary job is personnel health and safety on a day-to-day basis.

3. Military Programs

Various models of safety exist throughout the different branches of service within the military. What are common to each are their systematic and integrated approaches to safety, applying comprehensive frameworks to oversee operations and govern the behaviors of personnel in order to minimize the risk of injuries and accidents. This research did not evaluate all military programs, but focused on several that highlight the effective concepts and models being utilized, providing possible opportunities for applicability to the law enforcement profession.

These models or programs represent different comprehensive strategies to include the implementation of safety and risk management systems (Crew Resource Management and Operational Risk Management), implementation of mandated policies and procedures to guide behavior (Army Safety Program), a review process to improve safety and

effectiveness during training and operations (After Action Reviews), and development of educational tools to reinforce safety both at home and at work (Readiness Through Safety Program).

a. Crew Resource Management

Crew Resource Management (CRM) was developed by the aviation industry to increase the effectiveness and performance of flight crews after human errors were identified as the leading cause in a series of accidents in the 1970s.²⁹⁷ CRM can be defined as “using all the available resources—information, equipment, and people—to achieve safe and efficient flight operations.”²⁹⁸ The concept can be first traced back to a NASA workshop in 1979 that examined psychological research into aviation accidents.²⁹⁹ CRM became a mandatory process for military flight crews to utilize in the 1990s, and was instituted in the commercial airlines in 1998.³⁰⁰

CRM comprises five factors: “communication, situational awareness, decision-making, teamwork, and barriers, designed to keep minor human errors or oversights from escalating into a major accident.”³⁰¹ The goals of CRM are “to minimize the effect that human error has on operations and maximize human performance.”³⁰² CRM provides for better teamwork among crew members; equips crew members with new communication and problem solving skills; creates an operating environment where team member input is both welcome and expected, while maintaining legal authority; and contributes to the proactive prevention of workplace accidents.”³⁰³

²⁹⁷ Rhona Flin, Paul O’Connor and Kathryn Mearns, “Crew Resource Management: Improving Team Work in High Reliability Industries,” *Team Performance Management* 8 (2002): 68–78.

²⁹⁸ Paul O’Connor, Rhona. Flin and G. Fletcher, “Techniques Used to Evaluate Crew Resource Management Training: A Literature Review,” *Journal of Human Factors and Aerospace Safety* 2 (2002): 217–234.

²⁹⁹ O’Connor, Flin and Fletcher, “Techniques Used to Evaluate Crew Resource Management Training,” 217–23

³⁰⁰ Eduardo Salas et al., “Does Crew Resource Management Training Work?: An Update, an Extension, and some Critical Needs,” *Human Factors* 48 (2006): 392–412.

³⁰¹ International Association of Fire Chiefs (IACF), *Crew Resource Management: A Positive Change for the Fire Service* (Fairfax, VA: International Association of Fire Chiefs, 2003).

³⁰² IACF, *Crew Resource Management*.

³⁰³ *Ibid.*

Although listed as a military program, CRM has been adopted by other organizations including air traffic control, nuclear power industry, offshore oil industry, healthcare, and the fire service. With recent implementation in the fire service, law enforcement may discover a similar direct application for CRM to high-risk operations. Utilizing a similar decision-making process on joint operations will only enhance communication, teamwork, effectiveness, and safety for both agencies.

b. Operational Risk Management

Operational Risk Management (ORM) is a risk management and decision-making tool for reducing the inherent risk in conducting military operations and increasing operational effectiveness. In his thesis on “Safety Risk Management for Homeland Defense and Security Responders,” Tommey Meyers describes the United States Coast Guard definition of ORM as

a continuous, systematic process of identifying and controlling risks in all activities according to a set of pre-conceived parameters by applying appropriate management policies and procedures. This process includes detecting hazards, assessing risks, and implementing and monitoring risk controls to support effective, risk-based decision making.³⁰⁴

ORM is built upon the risk management framework that implies measures to reduce the frequency of accidents can be identified, evaluated, and mitigated.³⁰⁵ ORM provides military commanders with the means to help define risk to personnel and resources and control it where possible. In military organizations, ORM has become a standard process to increase mission success in high-risk environments.³⁰⁶ It “incorporates four different principles: accept risk when benefits outweigh the costs, accept no unnecessary risk, anticipate and manage risk by planning, and make risk decisions at the right level.”³⁰⁷

³⁰⁴ Tommey H. Meyers, “Safety Risk Management for Homeland Defense and Security Responders” (Master’s thesis, Naval Postgraduate School, 2005).

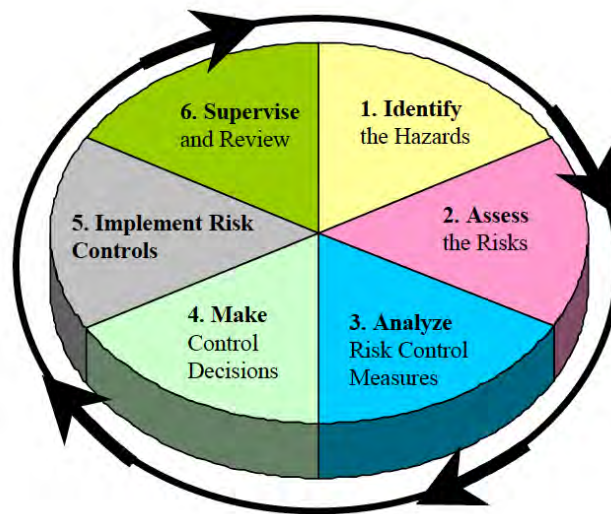
³⁰⁵ Meyers, “Safety Risk Management.”

³⁰⁶ Ibid.

³⁰⁷ James C. Tanner, *Operational Risk Management at the Operational Level of War* (Newport, RI: Naval War College, 1997)..

The United States Coast Guard (USCG) was the first military organization to adopt ORM in 1999, after several major marine accidents resulted in the loss of life in the early 1990s.³⁰⁸ All other military branches of service developed and implemented ORM following the USCG's implementation, for similar reasons. The "ORM process consists of five steps: hazard identification, risk assessment, analyze control measures, make control decisions, control implementation, and supervision."³⁰⁹ Military commanders use ORM in various situations to include the planning phase of operations, the evaluation of new procedures or tactics, and when time critical risk decisions are required in battle.³¹⁰ Figure 6 illustrates the various steps in the ORM process.

Figure 6. Six-Step ORM Process



Source: F Federal Aviation Administration, "Operational Risk Management." In *System Safety Handbook, Chapter 15: Operational Risk Management (ORM)*, 2000, (Washington, DC: FAA), p. 5.

The ORM process has direct application to the high-risk environment of both law enforcement and the fire service, where critical decisions must be routinely made that

³⁰⁸ FAA, *FAA System Safety Handbook*.

³⁰⁹ Ibid.

³¹⁰ Ibid.

balance risk with mission accomplishment. The implementation of ORM in public safety could assist commanders and supervisors in reducing poor decision-making during high-risk operations that leads to an increased risk of injuries and fatalities to personnel.

c. *After-Action Review*

After-action reviews (AARs) are a critical component of military safety programs, developed by the United States Army in the 1970s to provide detailed feedback to units on individual and collective performance and their relation to combat outcomes.³¹¹ In addition to a detailed analysis of combat outcomes and unit performance, the AAR also included the identification of areas requiring special attention to safety and training.³¹² The Army's development and use of the AAR process has led to a significant increase in the "Army's capacity to learn and adapt continuously, while fostering an expectation that behaviors and decisions will be reviewed to enhance safety and minimize risk for future operations."³¹³

AAR processes as practiced by public safety agencies nationwide are typically reflective or retrospective processes that look backward to determine why something happened. They represent "a one-time reflection event that happens only after a project is complete."³¹⁴ These processes are often disconnected from the action or exercise, and happen after the conclusion of the event. They frequently focus on developing recommendations to be implemented by people other than those making recommendations, are not shared or discussed with those affected by the recommendations, and involve little planning for future success.³¹⁵

In contrast to the AAR process conducted by public safety agencies, the U.S. Army AAR process is conducted throughout the life of an event, rather than after the

³¹¹ Morrison and Meliza. *Foundations of the After Action Review Process*.

³¹² Ibid.

³¹³ Margaret J. Wheatley, "Can the U.S. Army Become a Learning Organization?" *Journal for Quality and Participation* 17 (1994): 5, <http://search.proquest.com/docview/219171935?accountid=12702>.

³¹⁴ Marilyn Darling, and Charles Parry. "After-Action Reviews: Linking Reflection and Planning in a Learning Practice," *Reflections* 3 (2001): 64.

³¹⁵ Darling and Parry. "After-Action Reviews," 64.

event is concluded. A valuable AAR process is concerned with future actions, not just reflection on what has happened. When identifying issues related to safety, examining how changes can be made in future actions can help to mitigate risk and prevent accidents and injuries. Figure 7 summarizes the main difference between the two types of AAR processes.

Figure 7. Two types of AAR Processes

Typical Retrospective AAR	<i>Living AAR Practice</i>
<ul style="list-style-type: none"> • "Learning" happens at the end of the project • Called for after "failure" • Meeting is planned after the project or event • One meeting with all the participants in one room • Reviews the entire project • Produces a detailed report leading to recommendations • Focuses more on dissecting past performance 	<ul style="list-style-type: none"> • Learning happens throughout the project • Planned for any project that is core to goals • Meeting is planned before the project or event • Meetings with smaller task-focused groups • Focuses on key issues relevant to going forward • Produces an action plan participants will implement • Focuses more on planning for future success

Source: Marilyn Darling and Charles Parry, "After-Action Reviews: Linking Reflection and Planning in a Learning Practice," *Reflections* 3 (2001): 2.

Research has shown that an AAR "works best if it is focused on the critical issues, done immediately after the action, is inclusive of the whole group, is accordance with a structured process, and leads back to action quickly."³¹⁶ The use of the AAR process promotes structured and purposeful dialogue where everyone's input is valued, an important dynamic in organizations with a positive safety culture. Group discussion, reflection, and understanding of actions are all integral components of the AAR process, which should lead to "sharing of learning in a way that will accelerate the rate of organizational improvement and safety."³¹⁷

³¹⁶ Baird, Holland and Deacon. "Learning from Action," 2–78.

³¹⁷ Ibid.

d. Army Safety Program

The United States Army has regulated safety through a comprehensive program known as the Army Safety Program. The program is a complex regulation outlined in an extensive, three-part document that provides guidelines and expectations for safety within the service organization. The regulation provides a holistic and detailed approach to all aspects of safety within the service organization, “prescribing Department of the Army (DA) policy, responsibilities, and procedures to safeguard and preserve Army resources worldwide against accidental loss.”³¹⁸

The regulation addresses “general Army Safety Program management functions necessary for sustaining all phases and operations of the Army, whether at the garrison, in contingency operations, or wartime conditions; those special Army Safety Program management functions that are specific to supporting soldiers during training, mobilization, tactical, and field operations in the garrison or during contingency and wartime conditions; and safety functions supporting the garrison and industrial base.”³¹⁹ The Program further prescribes that federal and state OSHA-mandated programs are implemented, and equipment standards are applied, to all Army operations to reduce the risk of accidents, injuries, and occupational illness.³²⁰

The Army Safety Program mandates the filing of safety investigation accident reports, many of which are used for the sole purpose of accident prevention. These reports, and the protected documents contained in the reports such as witness statements, are “prohibited from being used as evidence in any disciplinary, administrative, or legal action such as determining misconduct of Army personnel or liability in claims against the government.”³²¹ This encourages the honest reporting of accidents in the workplace and provides a valuable database of lessons-learned to assist in the prevention of future accidents.

³¹⁸ Department of the Army, *The Army Safety Program*.

³¹⁹ Ibid.

³²⁰ Ibid.

³²¹ Ibid.

e. Readiness through Safety Program

The U.S. Army also developed a user-friendly website dedicated to safety for military members and their families, titled Readiness Through Safety.³²² The website contains extensive information on safety in a variety of areas such as military training and tactics, vehicle operations, accident reporting and investigations, and aviation. Information on the website is also presented for the families of military personnel on topics such as home safety, sports and recreation, fire prevention, and safety for kids. The information is presented through a variety of different interactive resources such as toolkits, online training programs, articles, videos, and information papers.

The Army's focus on safety is reinforced on the website by leadership through messages from various unit leaders. Seasonal safety campaigns are also conducted and released every two years, and are intended to "promote individual responsibility and engagement on all fronts to help prevent fatalities and injuries throughout the year."³²³

4. Private Industry Programs

Private corporations have long recognized the need for safety in their operating environments, especially in industries such as manufacturing, chemical, nuclear, and aviation. As in the policing profession, these organizations require specialized equipment, training, policies and practices, and a strong culture of safety to minimize risk of injuries and fatalities in the workplace. Private industry sectors that have experienced high rates of accidents have responded proactively to address safety and prevent incidents from occurring, by recording, documenting, and analyzing patterns of accidents and injuries.³²⁴

Not all private industry safety programs can be directly translated and applied to police organizations, however, due to the unique environments that each operate in. Many private sector safety prevention programs have proven to be successful, but have

³²² "Readiness through Safety," U.S. Army, accessed April 5, 2015, <https://safety.army.mil/HOME.aspx>.

³²³ "Readiness through Safety."

³²⁴ Brandl and Stroshine, *The Physical Hazards of Police Work Revisited*, 262–282; Brandl and Stroshine, *Toward an Understanding of the Physical Hazards of Police Work*, 172–191.

not been considered, tested, or implemented in law enforcement agencies.³²⁵ Others have drawn criticism for their proclivity to create underreporting of injuries.

a. *Occupational Safety and Health Administration (OSHA) Standards*

An evaluation of private sector safety programs revealed industries that are heavily regulated by federal laws and mandates through the Occupational Safety and Health Administration (OSHA), which is “responsible for developing and enforcing workplace safety and health regulations.”³²⁶ The Occupational Safety and Health Act was created in 1970 and includes specific sections that address safety programs and responsibilities in the workplace.³²⁷

OSHA standards have a significant influence over safety practices implemented in private industry, especially in the chemical and manufacturing sectors. While this act has authority over federal law enforcement agencies and the military, its safety and health regulations do not apply to state and local law enforcement agencies.³²⁸ States, however, are permitted to adopt OSHA regulations within their own regulatory framework, and OSHA must approve all state programs. These regulations must be as strict as federal OSHA regulations, and do apply to state and local employees.

Public safety organizations generally fall into the general industry category, which includes a broad range of safety and health regulations.³²⁹ Regulations in this category applicable to the policing profession include standards for labeling hazardous chemicals, wearing personal protective equipment, respiratory protection, and handling bloodborne pathogens.³³⁰

³²⁵ Ibid.

³²⁶ Sanberg et al., *A Guide to Occupational Health and Safety*, 1–62.

³²⁷ Ibid..

³²⁸ Ibid.

³²⁹ Covell, *Occupational Safety and Health and the Police*, 188–190.

³³⁰ Ibid.

b. Behavioral-Based Safety Programs

Behavioral-based safety programs lead the field in private industry. They focus attention on the unsafe behaviors of employees and place responsibility for workplace safety directly on the worker rather than on workplace conditions.³³¹ E. Scott Geller states that programs in this category “consist of employee training regarding safe and at-risk behaviors, systematic observation and recording of the targeted behaviors, and feedback to workers regarding the frequency of safe vs. at-risk behavior.”³³²

An example of a private sector behavioral-based safety program that has proven to be a model for safety practices in the private industry is DuPont’s STOP Program. The Stop Program’s objective is to “teach safety auditing skills, so supervisors and employees can observe workers who are performing normal work activities, reinforce safe work practices, and correct unsafe acts and conditions.”³³³ This philosophy is shared in other private sector behavioral-based safety programs such as Aubrey Daniels International (ADI), whose approach is to work toward ensuring that employees at all levels of the organization “form a partnership of responsibility for creating and maintaining a safe workplace.”³³⁴

The behavioral-based approach can create problems when both employees and the environment contribute to workplace accidents and injuries. Behavioral-based programs have also drawn opposition from unions who advocate instead for safety programs “that enlist the skill, knowledge and commitment of the workforce in finding and correcting hazards.”³³⁵

³³¹ Frederick and Lessin, *Blame the Worker*, 10–17.

³³² E. Scott Geller, *Working Safe: How to Help People Actively Care for Health and Safety* (Boca Raton, FL: CRC Press LLC, 2001).

³³³ Geller, *Working Safe*,

³³⁴ *Ibid.*

³³⁵ *Ibid.*

c. Incentive-Based Safety Programs

Incentive-based programs are similar to behavioral-based safety programs and are designed to steer employee behavior toward increased safety practices through workplace rewards.³³⁶ Incentives are categorized as either extrinsic or intrinsic. Extrinsic incentives are tangible rewards that often come in the form of bonuses, gift certificates, or extra vacation time.³³⁷ These motivators can be counterproductive, as workers fail to develop a personal frame of reference for safety, instead focusing simply on the economic benefits of the reward.³³⁸ If the reward is considered out of reach, employees may not even change safety-related behaviors. Conversely, “intrinsic incentives have no explicit value, but are linked to the emotional need to feel appreciated.”³³⁹ Examples of intrinsic incentives include public recognition or monthly safe employee awards. They are considered more effective in embedding safety as a positive cultural norm in organizations

Critics of incentive-based safety programs argue that these programs actually discourage workers from reporting injuries. OSHA has expressed growing concern for workplace use of incentive-based safety programs that offer bonuses and other rewards for employees or teams of employees that achieve a certain number of hours without an injury.³⁴⁰ Despite laws to protect employees who report injuries and accidents or submit workers’ compensation claims, these types of programs have led to widespread underreporting of near-miss incidents, accidents, and injuries throughout industry because of fear of reprisal or humiliation.³⁴¹ Underreporting is even more prevalent when teams are involved, as employees will hide injuries and accidents to avoid their entire team from missing out on a reward or bonus or succumb to peer pressure. OSHA

³³⁶ Marc Resnick, “Safety Incentive Programs: Avoiding the Pitfalls,” *Professional Safety* (2009): 46–48.

³³⁷ Resnick, “Safety Incentive Programs,” 46–48.

³³⁸ *Ibid.*

³³⁹ *Ibid.*

³⁴⁰ Merilatt, “How to Motivate.”

³⁴¹ Frederick and Lessin, *Blame the Worker*, 10–17.

supports incentive programs that feature positive reinforcement for employees who demonstrate safe work practices and report close calls.³⁴²

Employers may also have reasons for discouraging employees from reporting accidents and injuries. When injuries are not reported, workers' compensation claims are not submitted, keeping employer insurance premiums and benefit costs low. The lack of reported injuries in private industry also assists employers in avoiding drawing attention from OSHA and being cited or fined. OSHA conducts "unannounced inspections of private industry workplaces when rates of employee injuries and illness reach a specified level."³⁴³

B. SUMMARY

What has become clear after an examination of safety programs in law enforcement and in other high-risk organizations, is the lack of a coordinated, comprehensive approach to safety within the policing profession. Although law enforcement is making sincere efforts to target specific high-risk areas to reduce the number of injuries and fatalities, the manner in which this is being carried out is not systematic, nor is it coordinated or supported through national efforts. Missing are standards and regulations to guide safety management, training programs to educate agencies on effective safety and risk management, and a culture that prioritizes and supports efforts to enhance safety.

In the next chapter, an analysis of research findings is conducted and numerous issues identified that impact the ability to effectively manage safety in the law enforcement profession. These issues will be discussed and used to formulate the basis for recommendations in the concluding chapter of this thesis.

³⁴² Ibid.

³⁴³ Ibid.

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VI. ANALYSIS AND SYNTHESIS OF FINDINGS

The purpose of this research was to examine effective safety programs and practices in high-risk organizations, with the goal of recommending a comprehensive law-enforcement safety management system. In comparing the practices of other organizations to current law enforcement efforts, numerous gaps and deficiencies were identified in the profession's approach to manage safety. To effectively address the research question, a comprehensive examination of these gaps was conducted, and several recommendations are offered to address them.

This research has confirmed there are significant gaps in the collection of injury and accident data. It has also identified there is no systematic, coordinated or comprehensive approach to safety management within law enforcement, nor is effective training available to guide safety management efforts. These failures are large and drive the lack of focused attention to other areas of safety across the profession. While identifying creative and effective efforts to address safety in specific, targeted areas, this research has concluded that the law enforcement profession falls short of incorporating a holistic approach to safety across all areas of risk, leaving gaps that contribute to preventable injuries and accidents.

The issues identified represent substantial deficiencies that must be addressed globally by the profession, and institutionalized by individual agencies, in order to effect positive change in organizational safety. Recommendations and solutions offered should incorporate comprehensive strategies to address each deficiency. Failure to do so will result in a continued pattern of repeated mistakes and missed opportunities to prevent accidents, injuries and fatalities, and impede efforts to increase safety within the profession.

Specific issues identified include

- failure to take a systems approach to safety management
- lack of dedicated safety personnel

- lack of education programs for senior management and rank and file officers on Occupational Health and Safety (OHS) management
- lack of a national mandate and reporting system for accidents and injuries
- lack of safety regulations and standards
- lack of a mandated and standardized AAR format and process
- failure to incorporate occupational health and safety as a discipline in the law enforcement profession

A. FAILURE TO TAKE A SYSTEMS APPROACH TO SAFETY MANAGEMENT

Despite the recent focus on improving safety through the implementation of various programs and initiatives, the law enforcement profession has neglected to adopt a comprehensive safety management system or risk management model to ensure oversight of all facets of operations, training, and routine day-to-day tasks. The current, piecemeal approach of addressing safety through individualized programs that target specific risks, has led to gaps in safety within agencies, resulting in preventable injuries and fatalities. This was most recently recognized in a report by COPS, which found a “pattern of programmatic fragmentation in the way police agencies address health and safety issues.”³⁴⁴ The COPS report also supported the findings of this research by stating “a comprehensive, holistic framework is needed that helps police agencies organize their efforts and gauge their progress in tackling all agency health, safety and wellness needs.”³⁴⁵

In contrast, a systems approach to safety “takes a broader view of what went wrong in the organization to allow the accident to take place, as opposed to focusing solely on the behavior of the employee involved.”³⁴⁶ In a systems approach, accidents are not viewed as chains of directly related failed events or human errors. Instead they consider accidents as “arising from the interactions among system components, not a

³⁴⁴ Kuhns, Maguire and Leach, *Health, Safety, and Wellness Program*.

³⁴⁵ Ibid.

³⁴⁶ Marais, Dulac, and Leveson. “Beyond Normal Accidents.”

single casual factor.”³⁴⁷ This approach is a radical departure for police agencies, which seek to assign individual blame and discipline for every duty-related mistake or accident. Although internal investigations must occur to ensure accountability and address deficiencies, developing a system to run parallel accident investigations to evaluate the incident from a safety and risk management standpoint is suggested, to determine if factors outside employee behavior have a causal link to the incident.

The NLEOMF’s recent study, *Destination Zero*, supported this research by revealing the lack of a comprehensive safety management system in the law enforcement profession. Although effective individualized safety programs were identified through the study, only one agency sought to coordinate safety across multiple risk areas and between units within the organization. No agency demonstrated the common components or organizational functions that comprise a recognized safety management system.

The need for a comprehensive approach to safety has previously been identified by BJA and PERF, who stressed the need for comprehensive and proactive health and safety management day-to-day, rather than in reaction to incidents or in response to emergency situations.³⁴⁸ The PERF report, the most detailed and comprehensive source located during this research, proposed a comprehensive OHS framework identifying a three-part approach to officer safety: knowledge, control and prevention, and maintenance and improvement.³⁴⁹ The PERF report developed detailed checklists to assist law enforcement agencies in addressing OHS issues within their organizations. In accordance with my findings from the *Destination Zero* study, PERF found that while elements of this framework were evident in many state and local law enforcement agencies, no consistent, comprehensive framework has been adopted within the profession. Instead, specific health and safety programs have been “implemented in a “piecemeal fashion” in reaction to emerging threats, legal mandates, or social pressure.”³⁵⁰

³⁴⁷ Marais, Dulac, and Leveson. “Beyond Normal Accidents.

³⁴⁸ Sanberg et al., *A Guide to Occupational Health and Safety*, 1–62.

³⁴⁹ Ibid.

³⁵⁰ Ibid.

Research conducted by Cooper in the UK on the management of occupational health and safety in the emergency response services also found that individual elements, such as specific programs in targeted risk areas, do not represent a comprehensive safety management system, instead “representing an incongruent behavior and attitude toward occupational health and safety.”³⁵¹ The RAND/NIOSH report further indicated that safety risk management should be an integrated approach that meets the needs of response by “embedding safety risk management into organizations’ standard operating procedures.”³⁵²

An effective approach to law enforcement injury prevention and risk mitigation requires the employment of a safety management system that allows agencies to conduct safety practices in a manner that is structured, coordinated across the entire agency, and integrated into the organization’s actions and decision-making. Research strongly supports the development and implementation of a comprehensive safety management system to oversee and coordinate safety across high-risk organizations.

B. LACK OF DEDICATED SAFETY PERSONNEL

Dedicated safety personnel are needed to “establish safety-related goals, policies and practices, and to ensure that organizational standards on agency-wide issues are disseminated and understood by all employees.”³⁵³ The coordination of safety-related practices across the organization is often absent when individual programs are implemented targeting only specific areas of risk, and no entity is tasked with coordination among the various components, as has been the practice throughout the law enforcement profession.

Out of the 97 programs studied in the initial phase of Destination Zero, only one had full-time, dedicated “safety officer” personnel that focused on a range of targeted risk areas within the law enforcement agency.³⁵⁴ Although notwithstanding the need for

³⁵¹ Cooper, “Safety Management in the Emergency Response Services,” 39–49.

³⁵² Meyers, “Safety Risk Management.”

³⁵³ Mannan, Mentzer and Zhang, *Framework for Creating a Best-in-Class Safety Culture*, 1423–1432.

³⁵⁴ “Destination Zero,” National Law Enforcement Officers Memorial Fund, accessed Aug. 18, 2015, <http://www.nleomf.org/programs/destination-zero/>.

additional improvement in its approach, the Fairfax County Police Department's Safety Officer Program stands alone in this category. Only one other department identified in the study, the Orange County Sheriff's Office (FL), proved innovative and comprehensive in its approach within a targeted risk area, dedicating a permanent coordinator to oversee wellness. In addition, many agencies did not have performance measurements to determine the effectiveness of the safety programs they had in place.

Also identified in this research is the absence of dedicated safety resources to high-risk law enforcement operations, such as the Incident Safety Officer (ISO) position developed and incorporated into operational response by the fire service. Only one agency identified in the Destination Zero study deployed safety officer personnel to high-risk operational incidents. Law enforcement response to complex, high-risk operations such as hostage-rescue incidents, barricaded subjects, active shooter, and explosive ordnance incidents, demands the utilization of dedicated and trained safety resources to oversee the safety of personnel during the incident. This is especially critical in large-scale, complex events involving multiple units or agencies, and those that extend into multiple operational periods, requiring the formal utilization of the incident command structure. In these scenarios, incident commanders focus their attention on eliminating the active threat and stabilizing the incident, while safety officers provide the incident commander with trained resources focused solely on implementing safety protocols to mitigate risk to personnel involved in the response operation.

Trained and experienced safety experts are a necessary component of any safety program within high-risk organizations. Safety professionals develop a comprehensive view of the safety issues confronting an agency, connecting dots, and addressing gaps not visible to individual units. Although not considered specialists in all areas of the profession, they work in coordination with technical experts, such as training safety officers and other OHS professionals, to ensure that effective safety practices are implemented in programs, tactics, and equipment. These experts also work with technical experts to "investigate and analyze work-related accidents for root cause and trends,

evaluate and recommend new equipment and processes to address safety concerns, and manage communications regarding safety-related issues throughout the organization.”³⁵⁵

Dedicated safety officer personnel also play a critical role in managing communications when safety-related issues arise that create fear and concern within law enforcement agencies, such as the recent 2015 Ebola outbreak that carried potential impact to first responders. During this health crisis, law enforcement agencies that had no safety or occupational health programs or personnel in place were left to rapidly seek out expert guidance to assist in developing safe response protocols, which created delays in communicating recommendations to officers.

Safety officers proactively work to develop valuable relationships with other health care professionals to gain insight on issues affecting the occupational health and wellness of employees, and act as agency liaisons when issues arise requiring outside expertise. This also exposes safety experts to effective policies and practices utilized in other fields that may be considered for application in the law enforcement profession. In addition, by developing relationships and partnerships with outside health and wellness providers, agencies can establish access to components of OHS programs without having to develop these resources internally, reducing management and staffing costs.

The Toronto (Canada) Police Service’s successful handling of the SARS outbreak in 2003 serves as an example of a law enforcement agency’s ability to manage communications involving a serious occupational health crisis. The department’s OHS Unit played a critical role in preventing the spread of the SARS disease through the organization by “providing regular interaction and timely information updates on risk management and risk tolerance strategies.”³⁵⁶ The OHS Unit was also able to “quickly address and discount rumors and false information that was being circulated by the media, which helped to dissipate fear and concern through the organization, allowing officers to focus on their public safety mission.”³⁵⁷

³⁵⁵ “Destination Zero.”

³⁵⁶ Sanberg et al., *A Guide to Occupational Health and Safety*.

³⁵⁷ Ibid.

Numerous factors should be considered when determining whether safety officer resources should be dedicated as full-time positions. The size and complexity of an agency and the number of different units and physical locations in the organization should be considered when evaluating whether full-time resources should be appointed. Smaller agencies located in one location can equally benefit from having safety officers serve in supplemental positions, due to the lack of complexity and ease of coordination within the agency. Supplemental safety officers should, however, devote full attention to the organizational function for which they serve whenever safety resources are needed.

C. LACK OF EDUCATION PROGRAMS FOR SENIOR MANAGEMENT AND RANK AND FILE OFFICERS ON OHS MANAGEMENT

Research of educational programs and professional training curriculum for law enforcement commanders and senior management reveals little emphasis or content regarding occupational safety and health. An examination of established national executive level programs for law enforcement leaders such as the FBI's National Academy, PERF's Senior Management Institute, and the Southern Police Institute's Chief Executive Leadership Course found no comprehensive or dedicated focus on occupational health and safety, although curriculum often includes limited topics regarding risk management and liability. The lack of OHS content in formal education programs at the national level sends the message that safety is not a priority for law enforcement senior leadership to address.

Workshops, websites, training aids, and educational documents have been developed in the past several years by law enforcement professional organizations such as the IACP, COPS, PERF, and BJA, addressing a variety of safety initiatives for law enforcement agencies of all size. Formal curriculum in national command schools and training academies, however, has yet to prioritize safety and develop content focusing on the development of effective safety management practices and a positive safety culture. Although the *Below 100* Program is available to officers throughout the country, and has been endorsed by many agencies, its ability to impact safety culture and change behavior is minimal without the continued support and institutionalization of the programs safety tenets by law enforcement organizations.

Leadership prioritization, support of safety management programs, and effective modeling of safety-related behaviors were previously identified as critical elements in achieving a positive safety culture within agencies. Without education and training regarding the need to develop a systematic and focused approach to safety, and methods to implement agency-wide OHS and risk management programs into day-to-day operations, law enforcement leaders will continue to approach safety in a reactive manner, missing opportunities for risk mitigation and prevention. The lack of a focused and proactive approach to safety by leadership also reinforces the existing culture within law enforcement that accepts all risk as part of the job, leading to preventable accidents and injuries.

The absence of training for safety officers and safety management practices implies a lack of importance and priority for the profession. Despite an emphasis on improving safety and the development of various safety programs in targeted risk areas, safety management and safety officer training courses have not been developed for the law enforcement profession. This void stands in stark contrast to the development of certification courses and institutionalization of the safety officer position in the fire service. As a result, law enforcement agencies are left to develop informal or untested approaches to improve safety that lack a recognized, systematic methodology or training curriculum across the profession, leaving gaps in oversight and coordination.

One exception to this tendency of not addressing safety concerns in a standardized manner is the TSO Program that was developed for instructors to reduce risk in scenario-based training. With the growing demand for law enforcement agencies to develop and conduct scenario-based training to more effectively exercise de-escalation techniques, especially during encounters with emotionally disturbed individuals, comes an increase in risk to participants. The utilization of formally trained TSOs to conduct scenario-based training will be critical to preventing accidents and injuries in the training environment.

The law enforcement profession could make significant strides in developing a safety officer curriculum by examining safety officer training in the fire service, both at the line and senior management level. Relevant safety-related practices and protocols could be adapted for and applied to the law enforcement environment. Developing safety

response protocols consistent with the fire service could also enhance coordination on incidents involving joint public safety response.

A study of safety-related practices in private industry would also provide law enforcement with new ideas and practices that could prove useful in developing innovative safety programs and practices within the profession. A certification course could then be developed utilizing effective practices and protocols from other organizations, and supported by professional groups such as the IACP, and offered as a standard for addressing risk management and managing safety within law enforcement agencies.

D. LACK OF A NATIONAL MANDATE AND REPORTING DEPOSITORY FOR INJURIES AND ACCIDENTS

The lack of a national reporting mandate for law enforcement line-of-duty injuries and accidents remains problematic. This gap was most recently identified by the President’s Task Force on 21st Century Policing, which called for “the establishment of a nationwide repository of data on law enforcement injuries, deaths, and near misses.”³⁵⁸ Effective risk management policies and practices cannot be developed to address deficiencies both within individual agencies and throughout the profession without detailed data on the number and type of injuries sustained. Lack of data also inhibits the ability to determine whether safety and risk management programs implemented have had a positive effect on reducing injuries and accidents in the workplace, or whether the introduction of new equipment or technologies is enhancing safety or exposing officers to additional risks.

Due to the vast number of independent law enforcement agencies nationwide (over 18,000), the establishment of a nationwide repository for injuries and accidents is not likely to occur without mandated regulations or federal legislation. Despite their proven value in saving lives, even mandatory wear policies for bulletproof vests did not become institutionalized among law enforcement agencies until the past decade, when the awarding of grant funding was tied to having such policies in place.

³⁵⁸ President’s Task Force on 21st Century Policing, *Final Report of the President’s Task Force*.

There is also significant concern among law enforcement leadership regarding how mistakes or failures will be communicated and shared publicly, and the impact of potential retribution. These fears are enhanced due to the media's highlight of problems and their focus on assigning blame. As Husted and Michailova observed, "individuals do not freely and openly share knowledge about the mistakes they have made."³⁵⁹

Many law enforcement agencies do not freely share accident and injury data and investigative details outside of their organization. Leaders often do not take responsibility for failures due to concerns regarding retribution and liability, and reports that are produced may omit pertinent information to shield individuals from potential negative impact. There is often a fear that leaders might blame those who are involved in failed response operations or workplace accidents and react to these failures by punishing them.³⁶⁰ These fears and perceptions permeate the public safety culture and interfere with accurate and effective reporting processes.

A regulation to mandate nationwide injury and accident reporting for law enforcement agencies is needed to compel organizations to provide this data. The knowledge that they will be required to provide detailed information on accidents and injuries to a nationwide depository may also motivate some agencies to proactively make changes in safety protocols before an incident happens.

E. LACK OF REGULATIONS AND STANDARDS FOR SAFETY

What has set the fire service, military, and other high-risk organizations in private industry apart from law enforcement regarding safety management has been the establishment of standards and regulations to govern behavior, operations, and reporting. Although gaps and safety challenges still exist in these organizations, especially regarding safety culture, the establishment of industry-wide standards and regulations enacted to govern safety practices and policies have assisted in achieving a coordinated effort and expectation of behavior throughout the respective professions. These regulations are often legislated, as through OSHA, and through specific industry

³⁵⁹ Husted and S. Michailova, "Diagnosing and Fighting Knowledge Sharing Hostility."

³⁶⁰ Baumard and Starbuck. "Learning from Failures."

standards developed for worker protection and safety. In the fire service, standards compel the reporting of accidents and injuries through several different national databases, contributing to the profession's ability to conduct effective risk assessment and enact preventative measures.

Even without safety standards and regulations to govern the profession, safety management certification programs developed and supported by national law enforcement professional organizations could significantly increase agency participation. Developing such programs in conjunction with state and local government insurance providers could provide motivation for agencies to participate, possibly leading to reduced insurance premiums and increased participation rates. This approach is not entirely uncommon in other areas within the law enforcement profession, as agencies voluntarily participate in certification programs for crime prevention for example, as well as state and national accreditation programs, to achieve recognition, maintain currency on best practices, and increase operational effectiveness.

F. LACK OF A MANDATED AND STANDARDIZED AAR FORMAT AND PROCESS

Across law enforcement, there are no universally accepted formats or approaches to the development or content of AAR documents, a standard requirement to produce them, or enough trained personnel to effectively lead and administer the process.³⁶¹ Some reports produced are comprehensive and provide useful and insightful recommendations, while others fail to be detailed enough to provide even general guidelines for improvement. Agencies also vary in their requirement to even produce such reports, or have personnel trained to effectively moderate the process.³⁶²

Research cites numerous problems with the current AAR process utilized by public safety agencies, which “supports the cycle of repeated mistakes and leaves questions as to the value of such documents and their impact on correcting behaviors and

³⁶¹ Donahue and Tuohy. “Lessons We Don’t Learn.”

³⁶² Ibid.

improving safety and response efforts for future events.”³⁶³ Law enforcement’s utilization of AARs over the past decade involving major events have largely identified core issues, including those surrounding safety, but little evidence exists that agencies have learned from these failures or affected the necessary policy and strategic changes to break the cycle of repeated mistakes.

Despite research findings supporting the failure of AARs to produce effective and safety-minded change in response protocols and strategies, one example stands out as an exception within public safety. The lessons learned from the Columbine High School shootings were widely publicized and distributed among public safety agencies nationwide, resulting in rapid changes in law enforcement and EMS tactical response for active shooter incidents.³⁶⁴ The reasons cited for the effective changes in law enforcement response to such incidents involve “widespread public outcry and fear, the Columbine Police Department’s willingness to take responsibility for the mishandling of the response, and the rapid dissemination of new protocols to public safety agencies nationwide to handle similar incidents in the future.”³⁶⁵ The Columbine incident reinforces the critical need to develop an effective AAR process to share lessons learned in order to develop more effective and safe response protocols and mitigate risk in the workplace. It also offers promise for other safety-related changes needed within the profession. The application of a standardized process and format for after-action reporting would assist in capturing consistency of information relating to safety across multiple agencies and disciplines, as well as from different types of incidents.

G. FAILURE TO INCORPORATE OCCUPATIONAL HEALTH AND SAFETY AS A DISCIPLINE

Widespread research has been conducted on occupational health and safety, safety management, risk management, safety culture, and safety intervention practices in high-

³⁶³ Thomas A. Birkland, “Disasters, Lessons Learned and Fantasy Documents.” *Journal of Contingencies and Crisis Management* 17 (2009): 146–156.

³⁶⁴ Columbine Review Commission, *The Report of Governor Bill Owens’* (Denver, CO: Columbine Review Commission, May 2001), <https://schoolshooters.info/sites/default/files/Columbine%20-%20Governor’s%20Commission%20Report.pdf>.

³⁶⁵ Donahue and Tuohy. “Lessons We Don’t Learn.”

risk organizations. Much of this research is empirically supported by other disciplines and holds promise for application in the law enforcement profession. Despite this, the law enforcement profession has neglected to collaborate with safety professionals and OHS experts in these organizations and industries, or capitalize on the existing experiences, practices and research of safety and health management programs outside the profession that have proven strategies to effectively mitigate risk and reduce occupational injuries and accidents.

Law enforcement has traditionally operated and trained in isolation, due to its unique environment and nature of duties. Training and response to identified problems have largely been developed internally, without partnerships or assistance from outside experts in other fields, due to an attitude within the profession that it has unique problems and issues that cannot be understood by or applied to other disciplines. The nature of the profession has also been to react to problems, not proactively address them. Safety management, however, requires a proactive approach to mitigate risk in the workplace and reduce the number of preventable accidents and injuries.

The need to incorporate occupational safety and health into operational response was recognized by the National Institute for Occupational Safety and Health (NIOSH) and the Rand Corporation in the aftermath of the terrorist attacks of 9/11, as they collaborated to address issues relating to the safety of first responders during operations.³⁶⁶ Their report, *Protecting Emergency Responders, Vol. 3, Safety Management in Disaster and Terrorism Response*, discusses how to develop a safety risk management approach for first responders that improves safety and effectiveness.³⁶⁷

H. SUMMARY

With the identification of numerous issues affecting law enforcement's ability to manage safety effectively, come opportunities to pose recommendations for improvement. The next chapter proposes solutions moving forward, the most important being the implementation of a recommended safety management framework for law

³⁶⁶ Meyers, "Safety Risk Management for Homeland Defense and Security Responders."

³⁶⁷ Ibid.

enforcement agencies. The framework was developed as a flexible model that can be adapted to agencies of any size and implemented without significant cost or extra resources. Law enforcement agencies can make significant strides in enhancing officer safety by fully implementing a safety management system within their organization. Other recommendations to improve safety are more complex and will require national level efforts from professional organizations and mandating authorities in order to be accomplished.

VII. DEVELOPING A SOLUTION

A. RECOMMENDATIONS

Widespread and meaningful improvements in law enforcement safety will require efforts by both individual law enforcement agencies and national police organizations, which have the ability to coordinate, mobilize, and drive priorities within the profession. While the majority of recommendations proposed require attention from the national level, the first recommendation offers an opportunity for agencies to begin the process of mitigating risk with the goal of reducing accidents and injuries. Adopting and implementing the proposed safety management model will allow agencies to take a proactive approach to managing safety throughout their organization. Recommendations proposed include the

- development and adoption of a standardized safety management system for law enforcement
- development of standardized OHS and risk-management training for both senior leadership and rank and file officers
- creation of a comprehensive, national survey regarding safety management practices across the profession
- development of a national mandate and reporting depository for injuries and accidents
- development of a standardized format for after-action review reports and training to conduct AAR processes

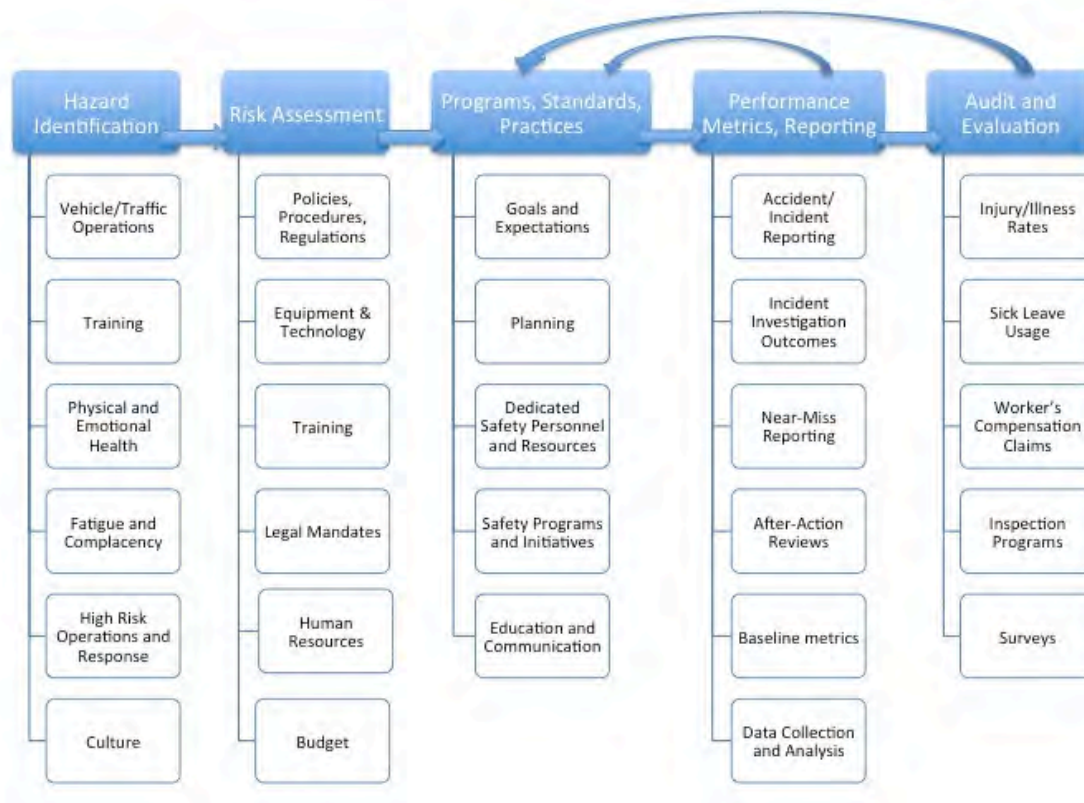
1. Development and Adoption of a Standardized Safety Management System for Law Enforcement

This safety management system model is a synthesis of the common components of effective safety management systems located during this research. The framework consists of hazard identification; risk assessment; programs, standards, and practices; performance metrics and reporting; and audit and evaluation. Its development is based on academic research regarding safety management systems and applied theory relating to systems thinking, and provides a comprehensive and flexible system for law enforcement agencies of any size to effectively identify and manage risk. The focus of this safety

management model is on areas of risk and behavior in which officers and agencies have significant control, but the model can also be expanded to threats such as ambush and terrorist attacks, which are often unforeseen and unpreventable.

The model delineates specific functions under each component, but leaves discretion for agencies on how to carry out each function. As such, it does not describe the specific tasks, procedures, policies or programs under each safety system component. The specifics of these should be defined by the individual agency based on its organizational structure, budgetary constraints, and resources. The successful implementation of this model, however, is entirely dependent on the priority police leaders place on safety within their organizations. Following the illustration of the model in Figure 8. is a brief description of each main component.

Figure 8. Model Law-Enforcement Safety Management System



a. Hazard Identification

Hazards that affect an organization must first be identified before any risk assessment can be conducted. The Canadian Centre for Occupational Health and Safety defines a hazard as “any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.”³⁶⁸ Many definitions throughout literature recognize the identification of hazards as the first step in any formal risk assessment process. Hazards can originate from both internal and external sources, and both should be closely examined when identifying hazards within the law enforcement profession.

An effective hazard identification process should identify every type of harm present in the workplace.³⁶⁹ This should be a collaborative process involving representatives from each area of the organization to ensure a comprehensive review of agency operations and functions. The specific hazards listed under the “hazard identification” component in this model can be expanded to include other areas of risk to law enforcement agencies, depending on agency priorities, needs, and threats.

b. Risk Assessment

Risk assessment is a process that identifies the types of risks present in the workplace, evaluates the likelihood and severity of those risks, and develops appropriate measures to control or prevent the harm from occurring.³⁷⁰ Graham states that risk assessment involves the prioritization of identified risks in terms of frequency and severity.³⁷¹ Determining how often an exposure to an identified risk may occur (frequency), and how damaging the exposure could be to employees and the organization (severity), allows a systematic method for prioritizing risks within the workplace.

³⁶⁸ “OHS Answers Fact Sheet,” Canadian Centre for Occupational Health and Safety, accessed Nov. 11, 2015, http://www.ccohs.ca/oshanswers/hsprograms/risk_assessment.html.

³⁶⁹ Abel Pinto, Rita A. Ribeiro and Isabel L. Nunes, “Ensuring the Quality of Occupational Safety Risk Assessment,” *Risk Analysis: An International Journal* 33 (2013): 409–419.

³⁷⁰ “OHS Answers Fact Sheet.”

³⁷¹ Graham, “Domestic Security 2015.”

Risk assessment should involve an understanding of how much risk is acceptable for each hazard identified. In the law enforcement profession, exposure to risk is accepted as part of the job, but restrictions are placed on officer response and behavior to control and mitigate the amount of risk officers face. Standards for acceptable risk for each hazard identified should be established and clearly communicated by agency leadership in any risk assessment process.

When assessing the risk of the various hazards identified, numerous areas within the organization must be examined to determine their effect on the problem. These areas include written policies and regulations, equipment and technology, legal mandates that govern actions and procedures, staffing resources, and budgetary funds to support necessary change.

Once hazards are identified, the following questions should be asked:

1. What might go wrong?
2. How can it happen?
3. How likely will it happen?
4. What are the possible consequences if it goes wrong?
5. How can this hazard be controlled?³⁷²

Developing a matrix or spreadsheet on each hazard identified, and answering the questions posed, will allow a thorough examination of the risks and establish a foundation for setting priorities and implementing control measures, the next step in the process. Many risk assessment tools are available for agencies that wish to engage in a more formal and structured process.

c. Implementation of Programs, Standards, and Practices

Once hazards have been identified and an appropriate risk assessment conducted, programs, practices, and standards must be implemented to control and mitigate the various hazards identified. Any program initiated should involve setting goals and

³⁷² Pinto, Ribeiro and Nunes, "Ensuring the Quality of Occupational Safety Risk Assessment," 409–419.

expectations for outcomes. Thorough planning should then be conducted that allows for the proper development of safety programs and practices. Programs and initiatives should be clearly communicated throughout the organization by leadership, and training and education provided where appropriate. Dedicated safety personnel should be appointed, whether as full-time positions or as supplemental units, and trained, to effectively carry out and oversee the coordination of safety management efforts across the organization.

Safety-related programs are diverse and many creative and innovative efforts are being developed in law enforcement agencies nationwide. The development of a nationwide database for best practices to target specific areas of risk would allow agencies to search for programs that meet their needs and resources. Dedicated law enforcement safety personnel could also examine innovative ideas on safety initiatives and programs by developing relationships with OHS professionals in other fields, and applying those practices to the profession.

d. Performance Metrics and Reporting

For every safety program initiated, performance metrics should be developed to determine whether the program is having its intended impact. While the effectiveness of safety programs is not easily measureable, especially in law enforcement, establishing goals and determining benchmarks within data sets prior to the start of any new program, can provide critical intelligence to gauge progress and impact. Various data sources are used to evaluate whether safety programs initiated are achieving expected outcomes. These include workers' compensation claims, injury and illness rates, and sick leave usage and are available to most agencies through their human resource department.

Agencies should establish effective reporting mechanisms to document safety-related issues. While internal investigations are necessary for officer accountability, parallel investigations of the incident for safety-related problems should be incorporated into agency practices to ensure that other factors beyond officer behavior are not contributing to the issue. Other procedures for reporting accidents or close calls should be clearly communicated to all employees and be non-punitive in nature. Results from all

incident-reporting mechanisms and after-action reviews should be fed back to all employees to enhance learning and assist in the future prevention of similar problems.

e. Audit and Evaluation

Audits are safeguards to ensure that safety goals are understood and given priority by employees and include such practices as inspection programs to review policies and written procedures, sampling employee behavior to determine compliance with agency standards, and surveys to examine the organization's safety climate and employee attitudes. Audits help to determine whether the *expected* ways of safely performing organizational tasks are the *actual* way the tasks are being carried out. This is critical in the law enforcement profession, where professional cultural has been identified as having a negative effect on officer safety, often resulting in unnecessary risk taking and preventable injuries and accidents.

f. Feedback

The inability to learn from past mistakes has posed significant challenges for law enforcement, largely due to the absence of effective feedback from both internal and external sources. Within a system, feedback involves the “transfer and sharing of information from the various monitoring and auditing functions to users at all levels of the system.”³⁷³ Information that is developed from monitoring and auditing safety programs and behaviors within a SMS should be fed back into the system to drive changes and adjustments in policies, behaviors, or equipment.

Critical to this SMS model is the incorporation of a feedback loop that can address issues at the technical (equipment), organizational (policies and procedures), or human (behavioral) level and provide solutions for corrective action and continuous improvement. Feedback can be gathered from almost any incident, evaluation, or monitoring process and can include deliverables such as incident reports that flag areas of concern and follow up, the sharing of after-action reports or incident debriefs, or surveys completed during the testing and evaluation of new equipment. Once feedback is

³⁷³ McDonald et al., “Safety Management Systems and Safety Culture,” 151–176.

obtained, it should be fed back into the risk assessment and policies, programs, standards, and practices component so that changes or adjustments can be made.

2. Development of Standardized OHS and Risk Management Training for both Senior Leadership and Rank and File Officers

Expectations for change must be accompanied by a plan to address training deficiencies and priorities. Standardized training courses need to be developed for both law enforcement leadership and for rank and file officers to provide the foundation on which to implement effective safety management practices.

Law enforcement leaders should be educated on the extent of the safety problem within the profession, how to conduct a proper risk assessment, and how to implement a safety management system to manage and mitigate the risks identified. Courses for law enforcement safety officers also need to be developed and standardized to ensure agency personnel assigned to these functions are well educated on the most current practices to manage safety across the organization. Such courses could be adopted by national law enforcement professional organizations or state mandating authorities to provide support, credibility, and certification to safety management. The development of formal safety courses for law enforcement would demonstrate a prioritized, coordinated, and proactive effort to enhance safety across the profession.

3. Creation of a Comprehensive, National Survey Regarding Safety Management Practices across the Profession

Law enforcement needs more accurate information regarding current safety management practices across the profession to more effectively develop safety-related training and standards. The NLEOMF's *Destination Zero* study cannot be considered comprehensive in scope, as it provided only a small sample of current safety programs and practices nationwide. Despite its exemplary efforts, the NLEOMF does not have sufficient communication channels or the professional influence to compel survey responses from the majority of law enforcement agencies.

To gain widespread participation and response, it is recommended that the survey be conducted by the IACP's Center for Officer Safety and Wellness and carefully

constructed to ensure the capture of the wide range of safety and risk management programs in existence. The IACP is the largest law enforcement professional organization in existence, with members both nationally and internationally. It has the ability to communicate and correspond with law enforcement agencies across the nation through the various police chief associations and criminal justice mandating authorities in each state.

The information generated from this survey could then be evaluated to better determine gaps and provide direction on the development of effective programs and practices that make up the various components in a safety management system. A matrix comprised of best practices within targeted risk areas could then be constructed and shared with the profession to generate agency interest and participation, and assist agencies in more effectively managing safety and risk. It could also be used to develop training programs for law enforcement safety management.

4. Development of a National Mandate and Reporting Depository for Injuries and Accidents

A true understanding of the safety-related problems within the law enforcement profession cannot be achieved without a clear and detailed picture of the extent and type of all injuries, accidents, and fatalities occurring in the line of duty. A national depository for the reporting of injuries and fatalities is of critical importance and must be created through federal mandates to ensure compliance and consistency among the vast number of different local and state law enforcement agencies.

The accomplishment of this task will likely require the support and proactive sponsorship of the IACP, the largest law enforcement professional organization in the world. Coordinating their legislative lobbying efforts nationwide with state police chief associations will provide political support at both the federal and state level. The inclusion of PERF, the Police Foundation, and other credible and highly influential law enforcement professional organizations could assist in garnering support. Highlighting the existence and effectiveness of mandatory reporting mechanisms in the fire service may also prove a valuable strategy for accomplishing this goal.

5. Development of a Standardized Format for After-action Review Reports and Training to Conduct AAR Processes

Throughout law enforcement, there are no universally accepted formats for AAR documents. Those that are produced vary in their level of detail and usefulness, and are normally limited to major incidents. While some provide a thorough examination of issues and propose valuable recommendations, others fail to incorporate honest feedback or suggest areas for improvement. Even when practical and achievable recommendations are made, follow up is not always conducted to ensure changes are implemented in agency policies and procedures.

The development of a standardized format for AAR reports and training on how to properly conduct an AAR process could provide the necessary platform and encouragement for agencies to adopt and institutionalize an AAR process for routine operations and major incidents. Valuable lessons are often lost for smaller incidents that happen frequently within an agency. Failing to use the AAR process on a consistent basis results in opportunities lost for agencies to incorporate ongoing learning processes into the organizational culture. Smaller, more isolated incidents offer agencies the regular opportunity to practice using the AAR process and institutionalize it as part of a learning system, as well as a tool to drive organizational change and performance.

The addition of a standardized format for an AAR report could provide consistent reporting across agencies, create additional opportunities for agencies to identify problems and develop more effective safety and response protocols, move agencies closer to becoming learning organizations, and reduce the number of preventable injuries and fatalities within the profession.

B. CHALLENGES TO IMPLEMENTATION

The vast number of independent law enforcement agencies across the country, over 18,000, has contributed to a lack of a focused and coordinated approach to safety in the profession. Agencies operate independently or within individual state criminal justice mandating authorities, leading to a wide range of different policies and practices. Priorities are vastly different for various police agencies, which are impacted by political

and budgetary concerns. State criminal justice regulatory authorities do not emphasize safety programs, and OSHA regulations only govern specific areas of law enforcement operations. Accreditation standards also differ from state to state, but even national standards through CALEA, the Commission on Accreditation for Law Enforcement Agencies, do not mandate the implementation of a comprehensive safety management system or the dedication of trained safety officer personnel.

The development of national regulations and standards, certifications, and curriculum for training personnel and agencies on safety management strategies, could provide the necessary requirement and motivation for agencies to take a proactive approach to safety-related issues, increasing opportunities for prevention and mitigation. Any initiatives developed will likely fail, however, without the strong support from an influential national law enforcement professional organization such as the IACP.

Finding resources to develop and implement safety, health, and wellness programs is a significant challenge in today's economic climate of shrinking budgets. Depletions in personnel and programs, mandates for additional certifications in existing skills, and the impact of technology demands, have resulted in fewer opportunities for law enforcement agencies to implement new programs. Implement new programs becomes even more challenging when performance outcomes cannot be readily identified or achieved in a short time period, as is often the case with safety programs. BJA, COPS, and PERF have all recognized there is little information available on the economic value of OHS programs for law enforcement, making justification for resources an even greater challenge.³⁷⁴ Conducting targeted studies over time and building in performance metrics can assist in demonstrating the benefits of these programs to both agencies and mandating authorities.

Lastly, the culture within law enforcement organizations continues to be problematic, contributing to a pattern of acceptable risk taking that leads to repeated injuries and accidents. Although the threats are varied and not all injuries and fatalities can be prevented, law enforcement continues to experience problems in similar areas,

³⁷⁴ Sanberg et al., *A Guide to Occupational Health and Safety*, 1–62.

suggesting that organizational culture plays a key role in failing to address safety-related deficiencies. Wholesale improvement in safety outcomes can only be achieved when law enforcement leadership can become educated on the need for positive change, instill safety as a core value across the organization, and model and require positive safety behaviors from all employees.

Despite the challenges, law enforcement leaders can immediately begin to institute positive changes within their individual agencies by placing a priority on safety and implementing a system to manage safety across the organization. The proposed law-enforcement safety management framework offers a viable option for agencies of any size to manage safety without adding significant resources, presenting a systematic and structured approach to identifying hazards, and developing measures to control and mitigate risk. Although national safety initiatives will need to be developed in the area of training and standards, law enforcement agencies can utilize the framework to begin the process of self-evaluation, identify gaps in safety oversight, and implement programs and practices that address safety deficiencies within their organizations.

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VIII. CONCLUSION

The ability for law enforcement to incorporate meaningful change in safety management and reduce the number of injuries and fatalities remains a significant concern. A pattern of repeated mistakes from one incident to the next demonstrates the failure of current practices and processes to identify, govern, and correct deficiencies properly. Mechanisms and training programs are not in place to provide leadership with the proper skills to incorporate safety processes into law enforcement organizations effectively. Improvement in safety will require a substantial change in organizational culture, the implementation of a comprehensive safety management system, the training of law enforcement personnel in safety management practices, and a commitment to institutional learning.

The law enforcement profession must approach future solutions to improving safety from a systematic framework, based on specific recommendations and best practices found to be effective in other high-risk organizations. Safety management processes must become institutionalized into routine and high-risk operations at all levels. Identifying, standardizing, and mandating safety processes can assist agencies in mitigating risk and reducing the number of injuries and fatalities.

Meaningful solutions should be targeted to address challenges on the strategic and policy level, be supported by political and jurisdictional leadership, and lead to organizational learning and change. Without such an approach, agencies will continue to be compromised by preventable injuries and fatalities. This is a complex issue that will require significant change and collaboration across the entire profession, with input from a broad spectrum of disciplines, while challenging existing and deeply ingrained culture, strategies, and methods.

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